Acer B193R

Service Guide

Service Guide Version and Revision

Version	Release Date	Revision History	TPV model
A00	Mar.-24-2008	Initial Release	T97HNAD8K3ABHN/ T97HNAD8K3ABDN

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Conventions
The following conventions are used in this manual:

Screen messages	Denotes actual messages that appear on screen.
Note	Gives bits and pieces of additional information related to the current topic.
Warning	Alerts you to any damage that might result from doing or not doing specific actions.
Caution	Gives precautionary measures to avoid possible hardware or software problems.
Important	Remind you to do specific actions relevant to the accomplishment of procedures.

Preface

Before using this information and the product it supports, please read the following general information.

1. This Service Guide provides you with all technical information relating to the BASIC CONFIGURATION decided for Acer's "global" product offering. To better fit local market requirements and enhance product competitiveness, your regional office may have decided to extend the functionality of a machine (e.g. add-on card, modem, or extra memory capability). These LOCALIZED FEATURES will NOT be covered in this generic service guide. In such cases, please contact your regional offices or the responsible personnel/channel to provide you with further technical details.

2. Please note WHEN ORDERING FRU PARTS, that you should check the most up-to-date information available on your regional web or channel. If, for whatever reason, a part number change is made, it will not be noted in the printed Service Guide. For ACER-AUTHORIZED SERVICE PROVIDERS, your Acer office may have a DIFFERENT part number code to those given in the FRU list of this printed Service Guide. You MUST use the list provided by your regional Acer office to order FRU parts for repair and service of customer machines.

Warning: (For FCC Certified Models)

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

1. Reorient or relocate the receiving antenna.
2. Increase the separation between the equipment and receiver.
3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
4. Consult the dealer or an experienced radio/TV technician for help.

Notice:

1. The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
2. Shielded interface cables and AC power cord, if any, must be used in order to comply with the emission limits.
3. The manufacturer is not responsible for any radio or TV interference caused by unauthorized modification to this equipment. It is the responsibility of the user to correct such interference.
   As ENERGY STAR® Partner our company has determined that this product meets the ENERGY STAR® guidelines for energy efficiency.

Warning:

To prevent fire or shock hazard, do not expose the monitor to rain or moisture. Dangerous high voltages are present inside the monitor. Do not open the cabinet. Refer servicing to qualified personnel only.

Precautions

- Do not use the monitor near water, e.g. near a bathtub, washbowl, kitchen sink, laundry tub, swimming pool or in a wet basement.
- Do not place the monitor on an unstable trolley, stand, or table. If the monitor falls, it can injure a person and cause serious damage to the appliance. Use only a trolley or stand recommended by the manufacturer or sold with the monitor. If you mount the monitor on a wall or shelf, uses a mounting kit approved by the manufacturer and follow the kit instructions.
- Slots and openings in the back and bottom of the cabinet are provided for ventilation. To ensure reliable operation of the monitor and to protect it from overheating, be sure these openings are not blocked or covered. Do not place the monitor on a bed, sofa, rug, or similar surface. Do not place the monitor near or over a radiator or heat register. Do not place the monitor in a bookcase or cabinet unless proper ventilation is provided.
- The monitor should be operated only from the type of power source indicated on the label. If you are not sure of the type of power supplied to your home, consult your dealer or local power company.
- The monitor is equipped with a three-pronged grounded plug, a plug with a third (grounding) pin. This plug will fit only into a grounded power outlet as a safety feature. If your outlet does not accommodate the three-wire plug, have an electrician install the correct outlet, or use an adapter to ground the appliance safely. Do not defeat the safety purpose of the grounded plug.
- Unplug the unit during a lightning storm or when it will not be used for long periods of time. This will protect the monitor from damage due to power surges.
- Do not overload power strips and extension cords. Overloading can result in fire or electric shock.
- Never push any object into the slot on the monitor cabinet. It could short circuit parts causing a fire or electric shock. Never spill liquids on the monitor.
- Do not attempt to service the monitor yourself; opening or removing covers can expose you to dangerous voltages and other hazards. Please refer all servicing to qualified service personnel
- To ensure satisfactory operation, use the monitor only with UL listed computers which have appropriate configured receptacles marked between 100 - 240V AC, Min. 5A.
- The wall socket shall be installed near the equipment and shall be easily accessible.

Special Notes On LCD Monitors

The following symptoms are normal with LCD monitor and do not indicate a problem.

Notes

- Due to the nature of the fluorescent light, the screen may flicker during initial use. Turn off the Power Switch and then turn it on again to make sure the flicker disappears.
- You may find slightly uneven brightness on the screen depending on the desktop pattern you use.
- The LCD screen has effective pixels of 99.99% or more. It may include blemishes of 0.01% or less such as a missing pixel or a pixel lit all of the time.
- Due to the nature of the LCD screen, an afterimage of the previous screen may remain after switching the image, when the same image is displayed for hours. In this case, the screen is recovered slowly by changing the image or turning off the Power Switch for hours.

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Monitor Features

Chapter 1

Introduction

Scope

This specification defines the requirements for the 19” MICROPROCESSOR based Multi-mode supported high resolution color LCD monitor. This monitor can be directly connected to general 15-pin D-sub VGA connector and 24 pin DVI connector, also supports VESA DPMS power management and plug & play function.

Description

The LCD monitor is designed with the latest LCD technology to provide a performance oriented product with no radiation. This will alleviate the growing health concerns. It is also a space saving design, allowing more desktop space, and comparing to the traditional CRT monitor, it consumes less power and gets less weight in addition MTBF target is 50k hours or more.

Chart of B193R

Panel	HSD190MEN3-A00
Signal Interface	D-Sub 15-pin / DVI 24-pin
Sync Type	Separate / Compatible
Color Temp User Adjust	Support
DDC	DDC2B
Speaker	T97HNAD8K3ABDN:Yes T97HNAD8K3ABHN:No
Headphone Jack	T97HNAD8K3ABDN:Yes T97HNAD8K3ABHN:No
Microphone Jack	No
USB Hub	Not support
Tilt / Swivel	Yes / Yes

Electrical Requirements

Standard Test Conditions

All tests shall be performed under the following conditions, unless otherwise specified.

Ambient light	Dark room (< 1 cd/m2)
Viewing distance	40 cm for LCD performance, 20 cm for LCD failures
Warm up time	＞30 minutes
Analog Input signal	700 mVss
Control temperature	6500° K
Brightness control	The value under user mode
User contrast control	Set to The value under user mode, which allows that the brightest two of 32 linear distributed gray-scales (0～ 700mv) can be distinguished.
Picture position and size	Factory preset value
Viewing angle	90 ° H and V
AC Supply voltage	230V± 5％, 50±3Hz
Ambient temperature	20+5℃
Display mode	1280x1024, 75Hz, all white
e-color mode	Set to “User” mode

Measurement systems

The units of measure stated in this document are listed below:

1 gamma = 1 nano tesla

1 tesla = 10,000 gauss

cm = in x 2.54

Lb = kg x 2.2

Degrees F = [°C x 1.8] + 32

Degrees C = [°F - 32]/1.8

u' = 4x/(-2x + 12y + 3)

v' = 9y/(-2x + 12y + 3)

x = (27u'/4)/[(9u'/2) - 12v' + 9]

y = (3v')/[(9u'/2) - 12v' + 9]

nits = cd/(m2) = Ft-L x 3.426

lux = foot-candle x 10.76

LCD Monitor General Specification

LCD Panel	Driving system	TFT Color LCD
	Active Display Area	376.32 (H) x301.056 (V)
	Pixel pitch	0.294(H) x 0.294(V)
	Contrast Ratio	1000 : 1
	Response time	5ms
	Luminance of White	300(Typ.) cd/㎡
Input	Separate Sync.	H/V TTL
	H-Frequency	30kHz – 80kHz
	V-Frequency	55-75Hz
Viewing angle	(H)170 (V) 160(Type)	
Display Colors	16.7M	
Display mode	1280 x 1024 @75Hz	
EPA ENERGY STAR®	ON Mode	< 36W
	OFF Mode	< 1W
Contrast control	Set to The value under user mode, which allows that the brightest two of 32 linear distributed gray-scales (0～ 700mv) can be distinguished.	
Power Source	90 V ~ 240 V，50~60/± 3Hz	
Environmental Considerations	Operating Temp: 0° to 40°C Storage Temp: -20° to 60°C Operating Humidity: 15% to 90% Storage Humidity: 15% to 90%	
Peak surge current	< 55A peak at 240 VAC and cold starting	
Power line surge	No advance effects (no loss of information or defect) with a maximum of 1 half-wave missing per second	

LCD Panel Specification

General Specifications

Item	Specification		Unit
Outline dimension	396 * 324 * 16.5(Typ)		mm
Display area	376.32 (H) x301.056 (V) (19.0" diagonal)		mm
Number of Pixel	1280(H) x 1024(V)		Pixels
Pixel pitch	0.294(H) x 0.294(V)		mm
Pixel arrangement	RGB Vertical Stripe		
Display color	16.7M (6-bits+Hi FRC)		
Color temperature	6500K		
Display mode	Normally white		
Surface treatment	Antiglare, Hard-Coating (3H)		
Weight	1950		g
Back-light	4-CCFLs, Top & bottom edge side		
Input signal	2-ch LVDS		
Power consumption	System	3.5(Typ.)	W
	B/L	19.8(Typ.)	

Mechanical Information

Item		Min.	Typ.	Max.	Unit
Module Size	Horizontal(H)	395.5	396.0	396.5	mm
	Vertical(V)	323.5	324.0	324.5	mm
	Depth(D)		16.5		mm
Weight (without inverter)		--	1950	--	g
Torque of customer screw hole		--	--	3.0	Kgf*Cm

Electrical Characteristics

Item		Symbol	Min.	Typ.	Max.	Unit
Voltage of power supply		V_{DD}	4.5	5.0	5.5	V
Current of power supply	White	I_{DD0}	405	480	555	mA
	V-Color	I_{DD1}	500	600	700	mA
	Mosaic	I_{DD2}	810	1010	1210	mA
Vsync frequency		f_V	56	60	76	Hz
Hsync frequency		f_H	64	64	80	KHz
Frequency		f_{DCLK}	50	54	67.5	MHz
Input rush current		I_{RUSH}	--	--	3.0	A

Optical Specifications

Item		Symbol	Condition	Min.	Typ.	Max.	Unit
Contrast		CR	Θ=0° ϕ=0° Normal viewing angle	700	1000	--	
Response time	Rising	TR +TF		--	5.0	10	msec
	Falling			--			
White luminance (center of screen)		Y_L		250	300	--	cd/m^2
Color chromaticity (CIE1931)	Red	Rx		-0.03	0.641	+0.03	
		Ry			0.337		
	Green	Gx			0.304		
		Gy			0.620		
	Blue	Bx			0.141		
		By			0.073		
	White	Wx			0.313		
		Wy			0.329		
Viewing angle	Hor.	Θ_L	CR>10	75	85	--	
		Θ_R		75	85	--	
	Ver.	Θ_H		75	80	--	
		Θ_L		75	80	--	
Viewing angle	Hor.	Θ_L	CR>5	75	85	--	
		Θ_R		75	85	--	
	Ver.	Θ_H		75	85	--	
		Θ_L		75	85	--	
Brightness uniformity		B_{UNI}	Θ=0° ϕ=0°	75	--	--	%

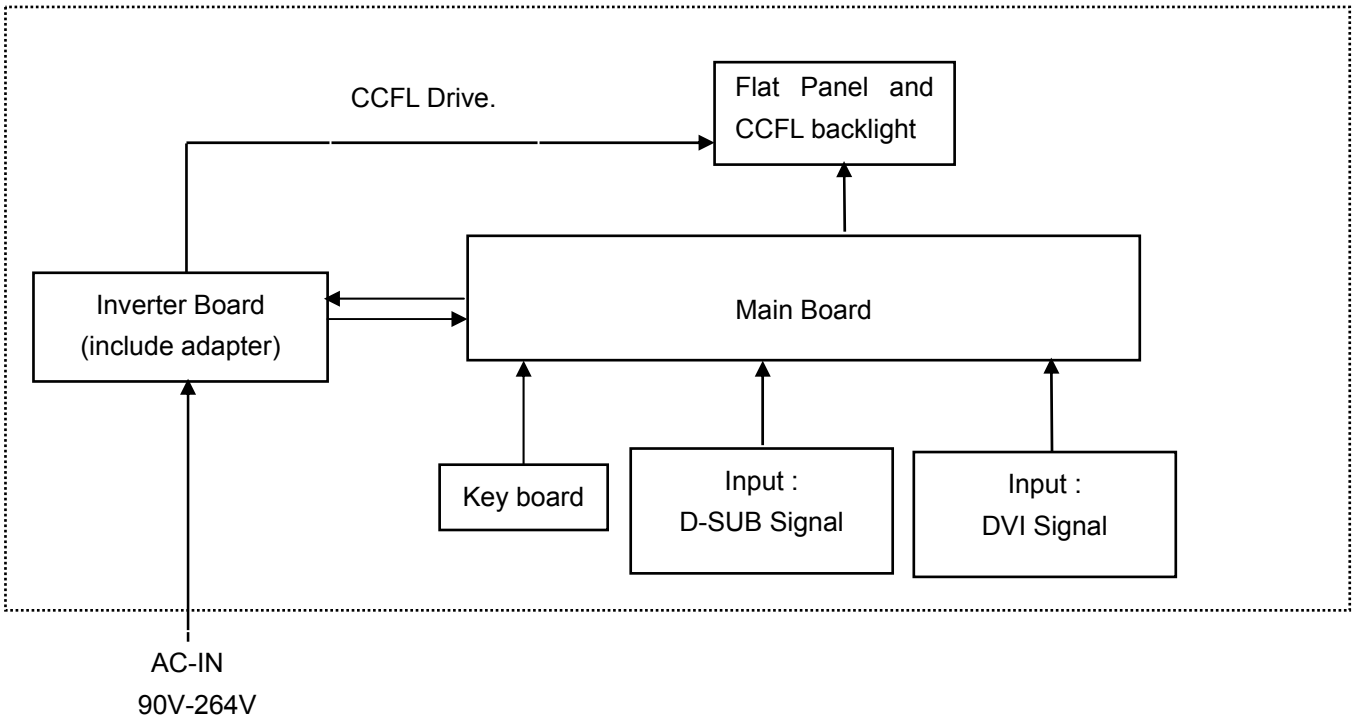
Support Timing

Mode	Resolution			
1	VESA	720 x 400	70	Hz
2	VGA	640 x 480	59.94	Hz
3	MAC	640 x 480	66.66	Hz
4	VGA	640 x 480	72	Hz
5	VGA	640 x 480	75	Hz
6		648 x 500	57.7	Hz
7	SVGA	800 x 600	56.25	Hz
8	SVGA	800 x 600	60	Hz
9	SVGA	800 x 600	72	Hz
10	SVGA	800 x 600	75	Hz
11	MAC	832 x 624	74.55	Hz
12	XGA	1024 x 768	60	Hz
13	XGA	1024 x 768	70	Hz
14	XGA	1024 x 768	75	Hz
15	VESA	1152 x 864	75	Hz
16	SXGA	1280 x 1024	60	Hz
17	SXGA	1280 x 1024	75	Hz

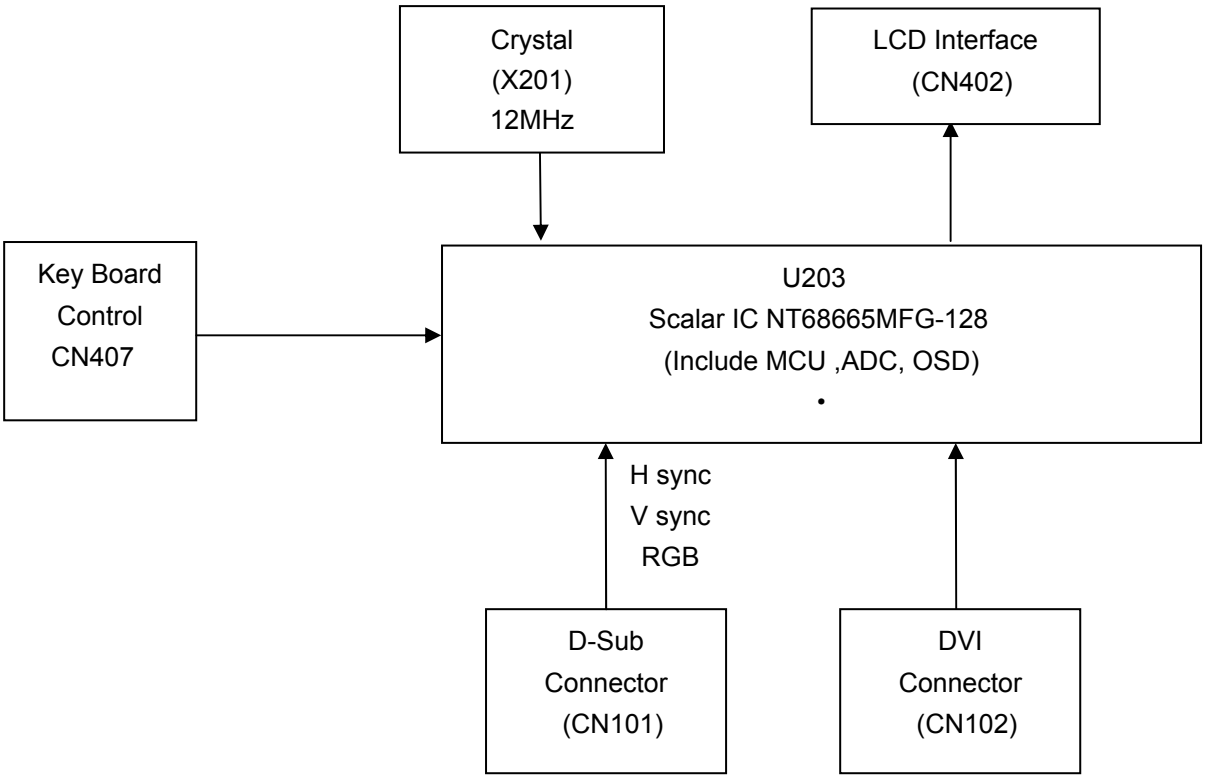
Monitor Block Diagram

The LCD MONITOR will contain a main board, a power board, and key board which house the flat panel control logic, brightness control logic and DDC.

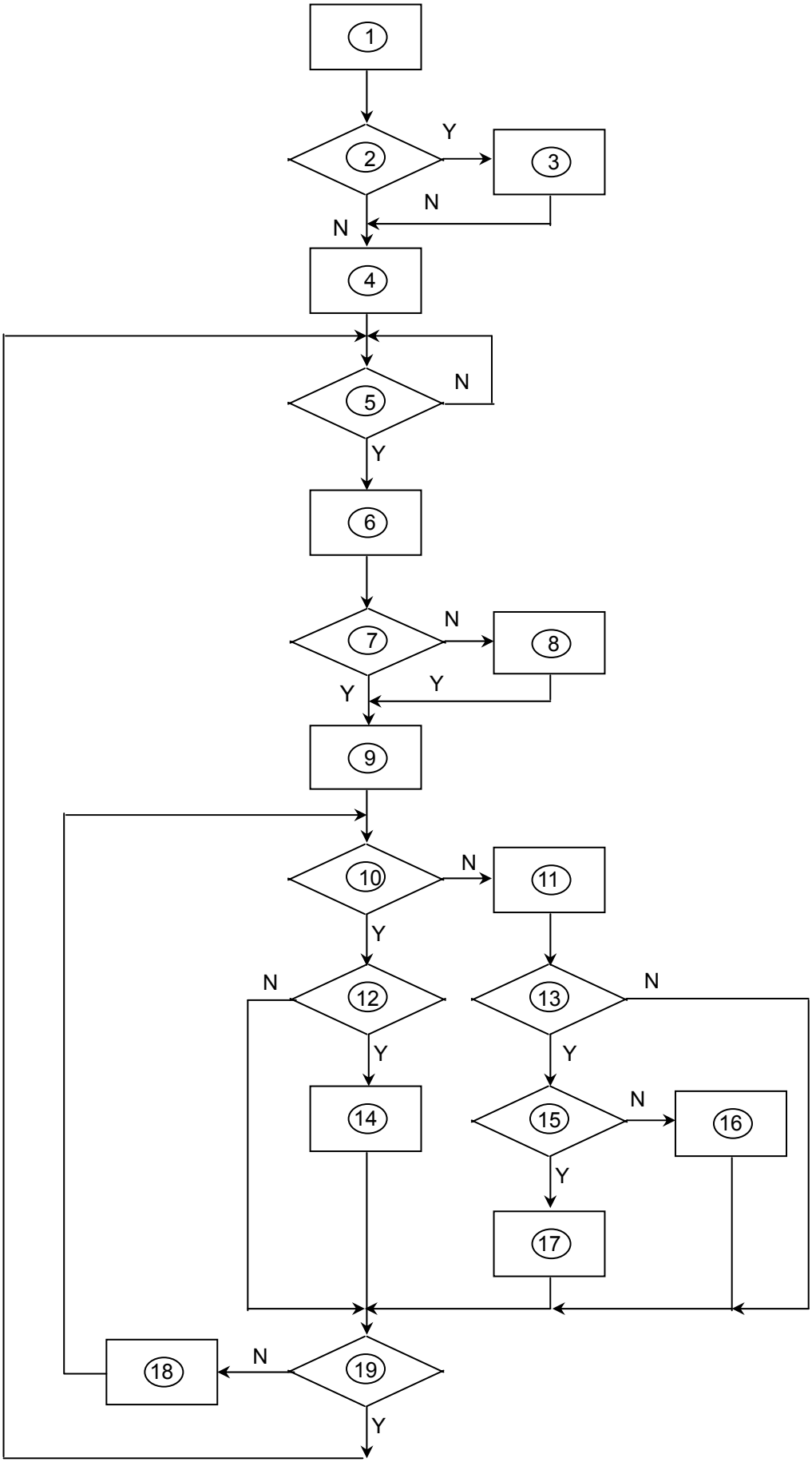
The power board will provide AC to DC Inverter voltage to drive the backlight of panel and the main board chips each voltage.



Main Board Diagram



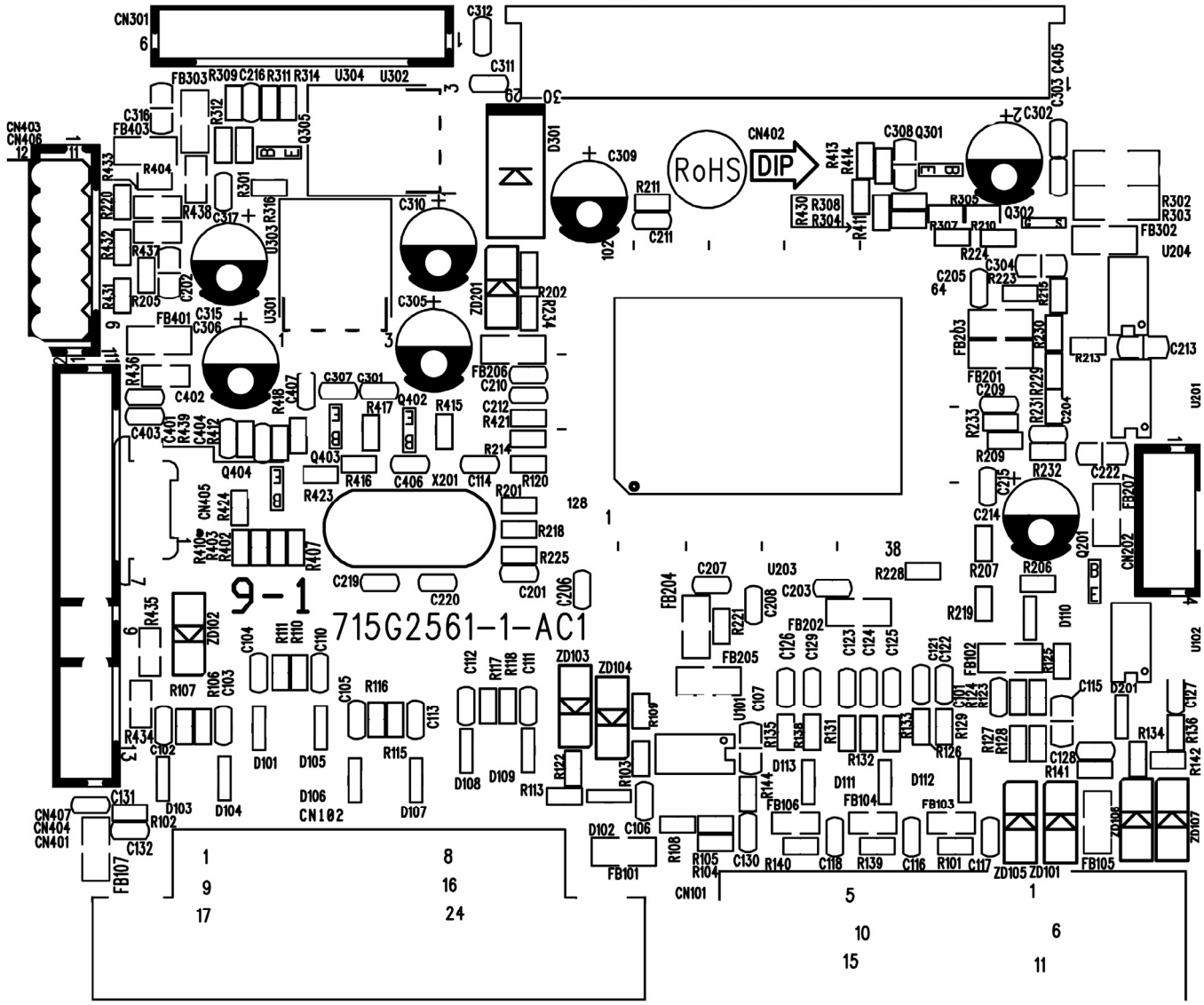
Software Flow Chart



Remark:

1) MCU initializes.
2) Is the EEPROM blank?
3) Program the EEPROM by default values.
4) Get the PWM value of brightness from EEPROM.
5) Is the power key pressed?
6) Clear all global flags.
7) Are the AUTO and SELECT keys pressed?
8) Enter factory mode.
9) Save the power key status into EEPROM. Turn on the LED and set it to green color. Scalar initializes.
10) In standby mode?
11) Update the lifetime of back light.
12) Check the analog port, are there any signals coming?
13) Does the scalar send out an interrupt request?
14) Wake up the scalar.
15) Are there any signals coming from analog port?
16) Display "No connection Check Signal Cable" message. And go into standby mode after the message disappears.
17) Program the scalar to be able to show the coming mode.
18) Process the OSD display.
19) Read the keyboard. Is the power key pressed?

Main Board Layout



Symbol	Description	Symbol	Description
CN407	WAFER	CN102	DVI 24PIN CONNECTOR
CN301	WAFER 9P RIGHT ANELE PITCH	U203	IC NT68665MFG-128 QFP-128L
CN402	CONNECTOR	U301	IC AP1117D33LA TO252-3L ATC
CN101	D-SUB 15PIN	U304	IC AP1117E18LA SOT223-3L ANACHIP
U204	IC AF24BC16-SI 16K SOIC-8		

Installation

To install the monitor on your host system, please follow the steps below:

Steps

1.Connect the video cable

A: Make sure both the monitor and computer are switched off.

B: Connect the VGA video cable to the computer.

C: Connect the digital cable (only for dual-input models).

(1) Make sure both the monitor and computer are switched off.

(2) Connect one end of the 24-pin DVI cable to the back of the monitor and the other end to the computer's port.

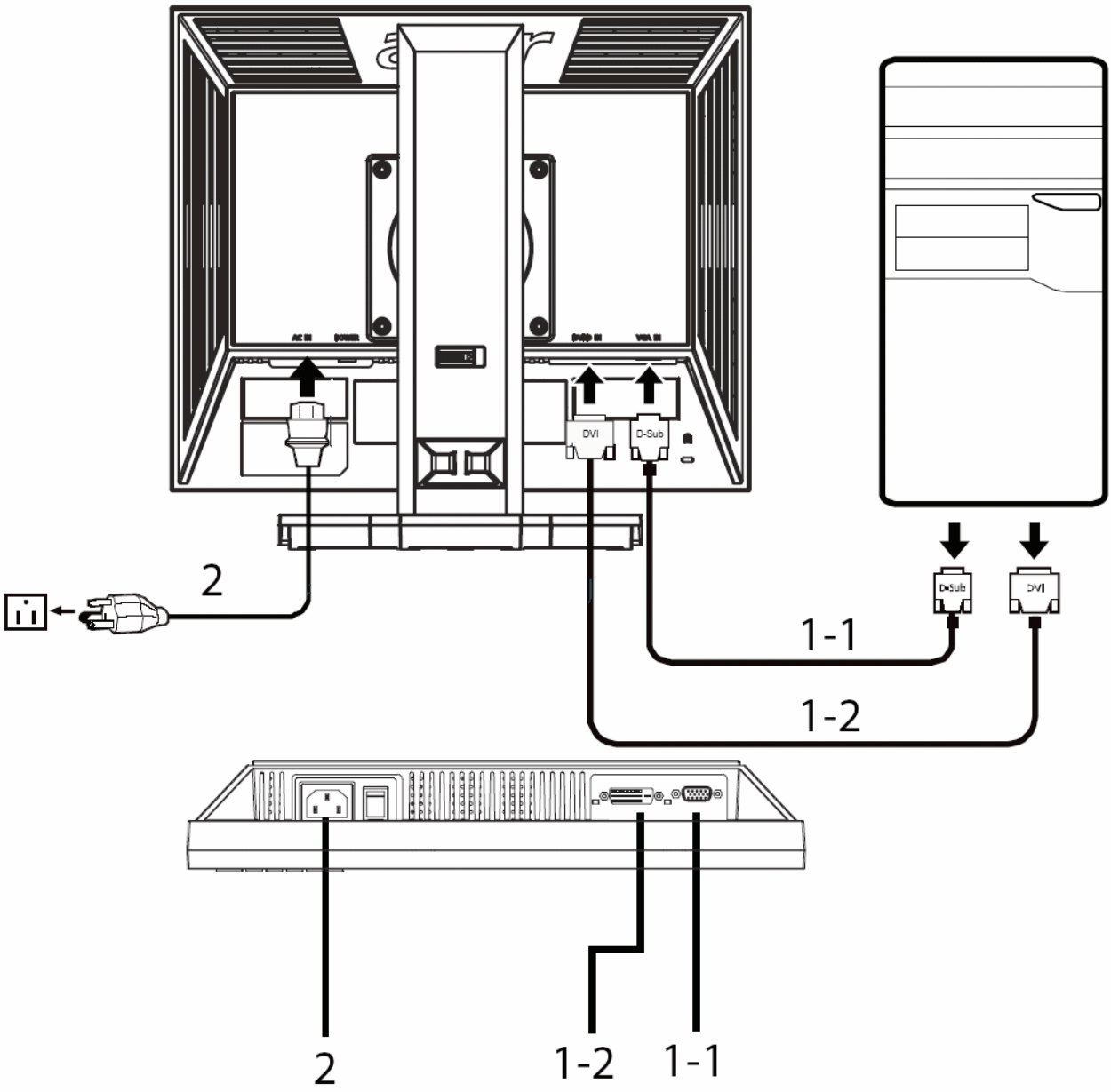
2.Connect the power cord

Connect the power cord to the monitor, then to a properly grounded AC outlet.

3.Turn on the monitor and computer

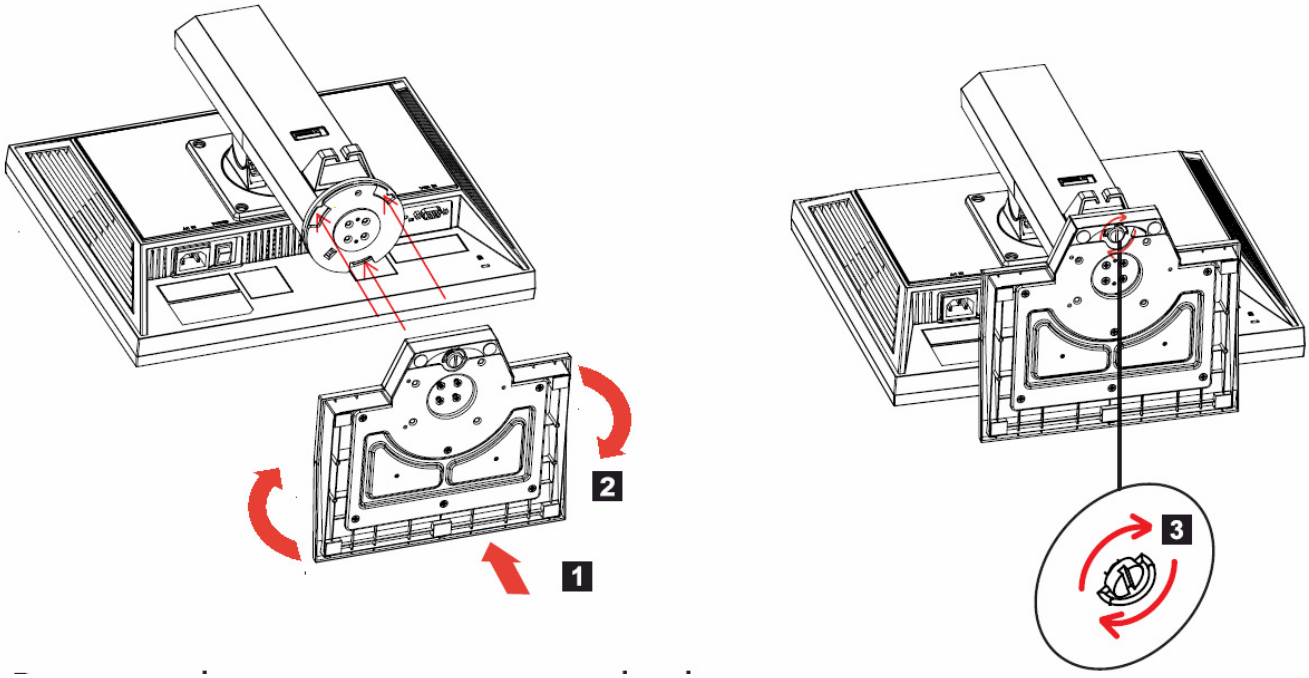
Turn on the monitor first, then the computer. This sequence is very important.

4.If the monitor does not function properly, please refer to the troubleshooting section to diagnose the problem.



Attaching/Removing The Base

Install: Align the base with the stand and push the base towards the top of the monitor, and then rotate the base clockwise. Tighten the screw clockwise.



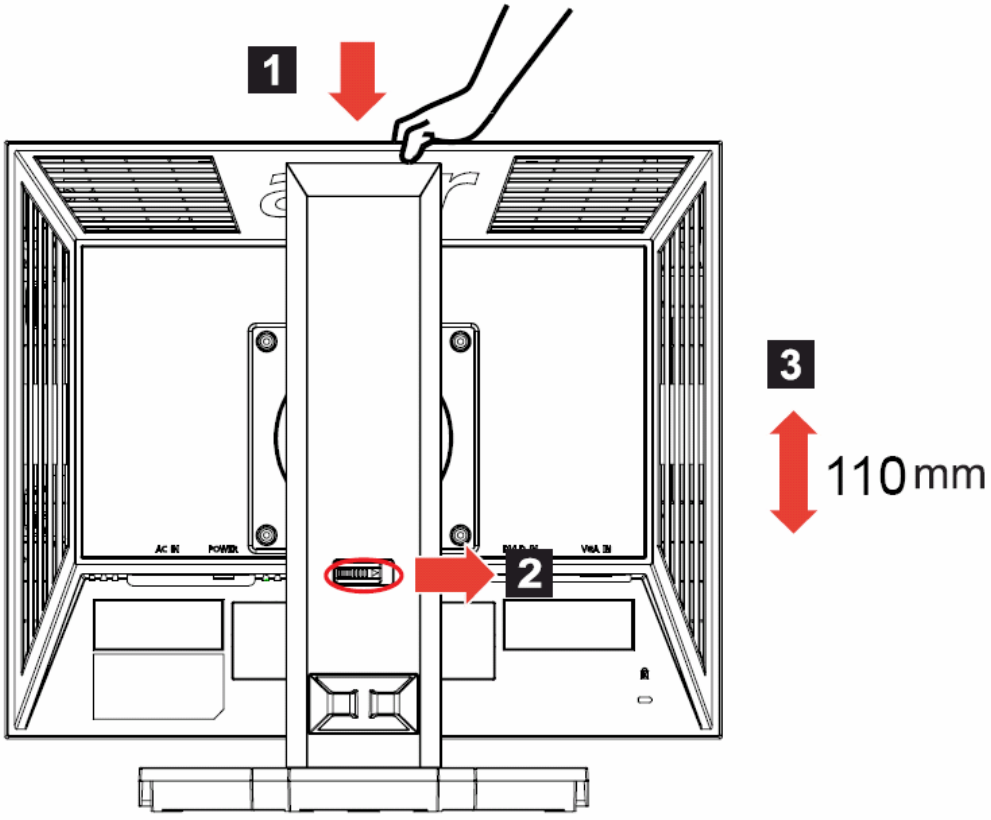
Remove: Reverse the steps to remove the base.

Screen Position Adjustment

In order to optimize the best viewing position, you can adjust the height/tilt/swivel/pivot of the monitor.

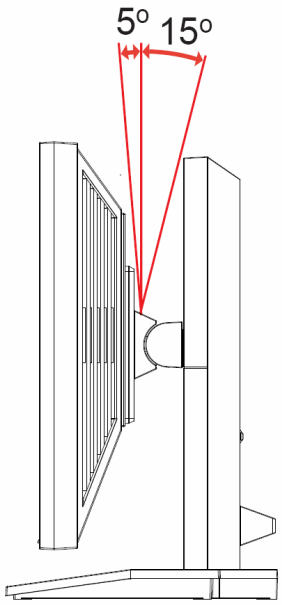
Height Adjustment

After pressing the top of the monitor, push the lock button towards right, then you can adjust the height of the monitor.



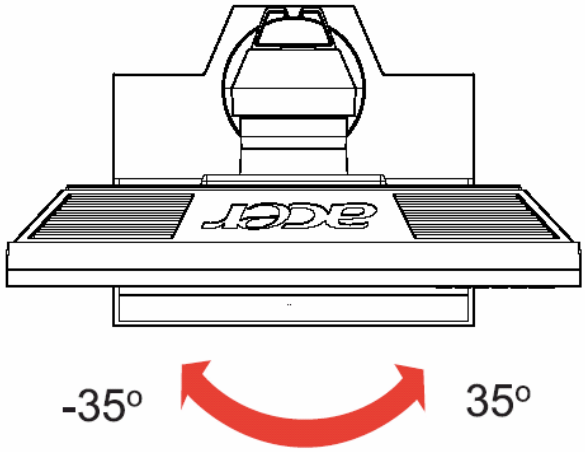
Tilt

Please see the illustration below for an example of the tilt range.



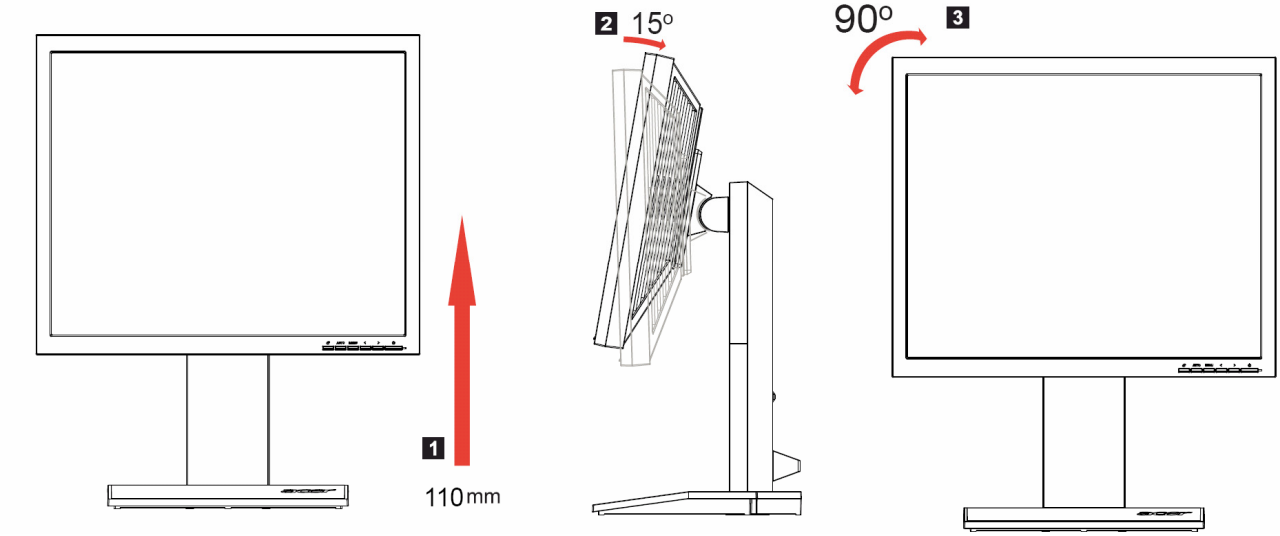
Swivel

With the built-in pedestal, you can swivel the monitor for the most comfortable viewing angle.



Monitor Pivot

Adjust height to the top position before rotation the monitor. Rotate clockwise until the monitor stops at 90°.



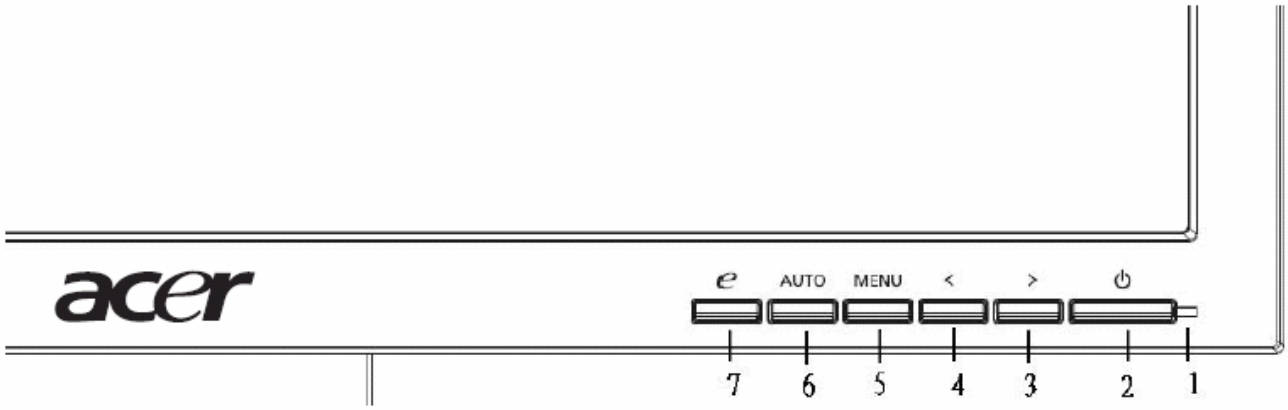
Operating Instructions

Chapter 2

Press the power button to turn the monitor on or off. The other control buttons are located at front panel of the monitor. By changing these settings, the picture can be adjusted to your personal preferences.

- The power cord should be connected.
- Connect the video cable from the monitor to the video card.
- Press the power button to turn on the monitor position. The power indicator will light up.

External Controls



Front panel controls

1 Power LED: Lights up to indicate the power is turned on.

2 Power Switch: Turn the power on or off.

3.4 < / > : Press < or > to navigate to the desired function, press Enter to select the function. Press < or > to change the settings of the current function.

5 Menu/Enter: Activate the OSD menu when the OSD is off or activate deactivate the adjustment function when the OSD is on.

6 Auto adjust button/Exit:

a. When the OSD menu is active, this button will act as the exit key exit OSD menu).

b. When the OSD menu is inactive, press this button for two seconds to activate the Auto Adjustment function. The Auto Adjustment function s used to set the HPos, VPos, Clock and Focus.

7 Empowering Key/Exit:

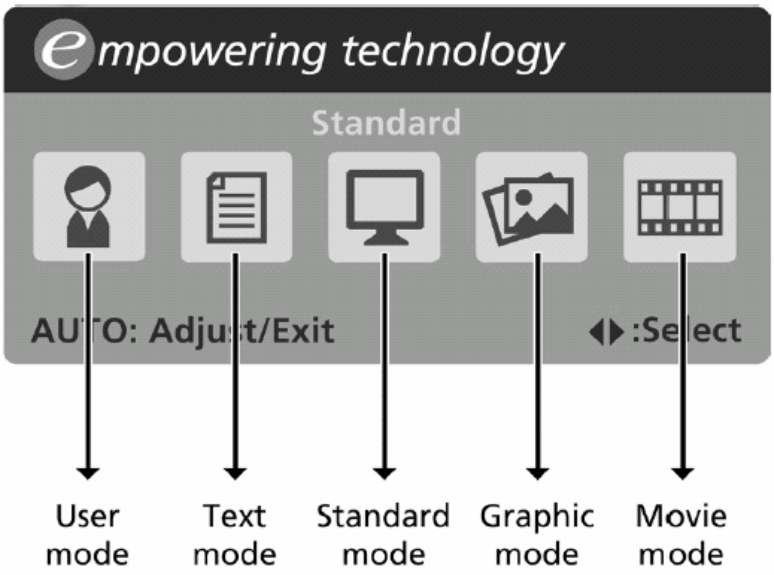
a. When the OSD menu is active, this button will act as the exit key exit OSD menu).

b. When the OSD menu is inactive, press this button to select scenario mode.

eColor Management (OSD)

- Operation instructions

  1 Press the e Empowering Key to open the Acer eColor Management OSD and access the scenario modes.
  2 Press "<" or ">" to select the mode.
  3 Press the Auto-adjust button to confirm the mode and run Auto Adjust.



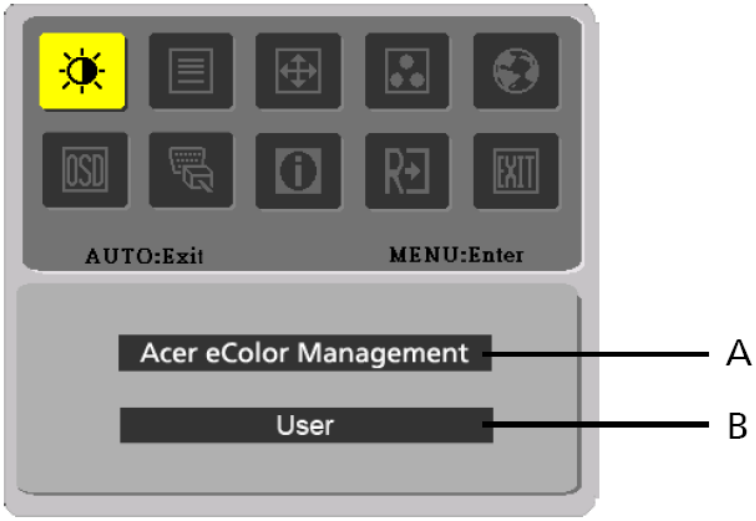
- Features and benefits

Main menu icon	Sub menu item	Description
	User mode	User-defined. Settings can be fine-tuned to suit any situation.
	Text mode	Optimal balance of brightness and contrast to prevent eyestrain. The most comfortable way to read onscreen text.
	Standard mode	Default settings. Reflects native display capability.
	Graphic mode	Enhances colors and emphasizes fine detail. Pictures and photographs appear in vibrant colors with sharp detail.
	Movie mode	Displays scenes in clearest detail. Presents great visuals, even in unsuitably-lit environments.

How to Adjust a Setting

1. Press the MENU-button to activate the OSD window.
2. Press < or > to select the desired function.
3. Press the MENU-button to select the function that you want to adjust.
4. Press < or > to change the settings of the current function.
5. To exit and save, select the exit function. If you want to adjust any other function, repeat steps 2-4.

- P/X Series OSD behave
  When user press "MENU" button on front bezel

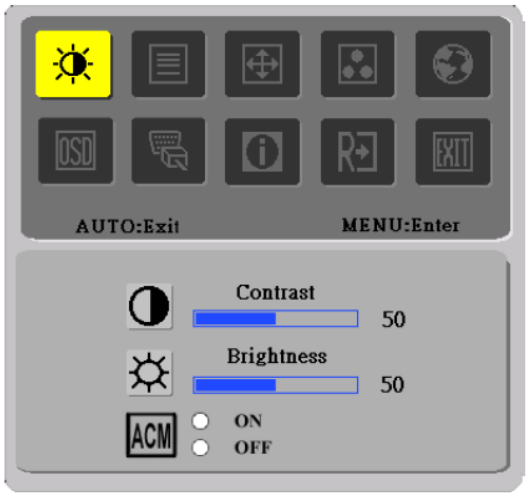


A. Acer eColor Management

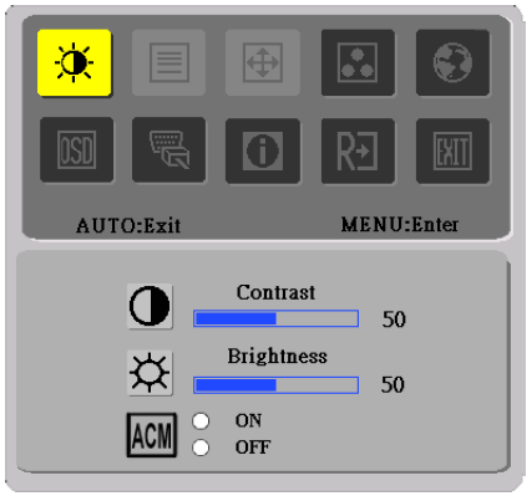
If selected to "Acer eColor Management " item, will appear the Acer eColor" OSD

B. USER

If selected to "USER" item, will appear the Standard OSD



I. Only Analog Input Model



II. Only Dual Input Model

Adjusting the picture

Main Menu icon	Sub Menu icon	Sub Menu item	Description
		Contrast	Adjust the contrast between the foreground and background of the screen image
		Brightness	Adjust the background brightness of the screen image
		ACM	ACM (Adaptive Contrast Management)A CM ON/OFF Switch, default "OFF"
		Focus	Adjust picture Focus (available in analog mode only)
		Clock	Adjust picture Clock (available in analog mode only)

Main Menu Icon	Sub Menu Icon	Sub Menu Item	Description
		H. Position	Adjust the horizontal position. (available in Analog mode only)
		V. Position	Adjust the vertical position. (available in Analog mode only)
	N/A	Warm	Set the color temperature to warm white.
	N/A	Cool	Set the color temperature to cool white.
		User /Red	Adjusts Red/Green/Blue intensity.
		User /Green	
		User /Blue	

	N/A	English	Multi-language selection.
	N/A	繁體中文	
	N/A	Deutsch	
	N/A	Francais	
	N/A	Espanol	
	N/A	Italiano	
	N/A	简体中文	
	N/A	日本語	
	N/A	Suomi	EMEA version OSD only
	N/A	Nederlands	
	N/A	Pyccknn	

Main Menu Icon	Sub Menu Icon	Sub Menu Item	Description
		H. Position	Adjust the horizontal position of the OSD.
		V. Position	Adjust the vertical position of the OSD.
		OSD Timeout	Adjust the OSD timeout.
	N/A	Analog	Select input signal from analog (D-Sub)
	N/A	Digital (only Dual-InputModel)	Select input signal from digital(DVI) (only Dual-Input Model)
	N/A	DDC/CI	Turn ON/OFF DDC/CI support
	N/A	Information	Show the resolution, H/V frequency andinput port of current input timing.
	N/A	Reset	Clear each old status of Auto-configurationand set the color temperature to Cool.
	N/A	Exit	Save user adjustment and OSD disappear.

Logo

When the monitor is power on, the LOGO will be showed in the center, and disappear slowly.

How To Optimize The DOS-Mode

Plug And Play

Plug & Play DDC2B Feature

This monitor is equipped with VESA DDC2B capabilities according to the VESA DDC STANDARD. It allows the monitor to inform the host system of its identity and, depending on the level of DDC used, communicate additional information about its display capabilities.

The DDC2B is a bi-directional data channel based on the I²C protocol. The host can request EDID information over the DDC2B channel.

This monitor will appear to be non-functional if there is no video input signal. In order for this monitor to operate properly, there must be a video input signal.

This monitor meets the Green monitor standards as set by the Video Electronics Standards Association (VESA) and/or the United States Environmental Protection Agency (EPA) and The Swedish Confederation Employees (NUTEK). This feature is designed to conserve electrical energy by reducing power consumption when there is no video-input signal present. When there is no video input signals this monitor, following a time-out period, will automatically switch to an OFF mode. This reduces the monitor's internal power supply consumption. After the video input signal is restored, full power is restored and the display is automatically redrawn. The appearance is similar to a "Screen Saver" feature except the display is completely off. Pressing a key on the keyboard, or clicking the mouse restores the display.

Using The Right Power Cord

The accessory power cord for the Northern American region is the wallet plug with NEMA 5-15 style and is UL listed and CSA labeled. The voltage rating for the power cord shall be 125 volts AC.
Supplied with units intended for connection to power outlet of personal computer: Please use a cord set consisting of a minimum No. 18 AWG, type SJT or SVT three conductors flexible cord. One end terminates with a grounding type attachment plug, rated 10A, 250V, and CEE-22 male configuration. The other end terminates with a molded-on type connector body, rated 10A, 250V, having standard CEE-22 female configuration.
Please note that power supply cord needs to use VDE 0602, 0625, 0821 approval power cord in European counties.

This chapter contains step-by-step procedures on how to disassemble the monitor for maintenance.

Disassembly Procedure

1. Remove the HINGE ASSEMBLY as the following indicator. (Fig 1)

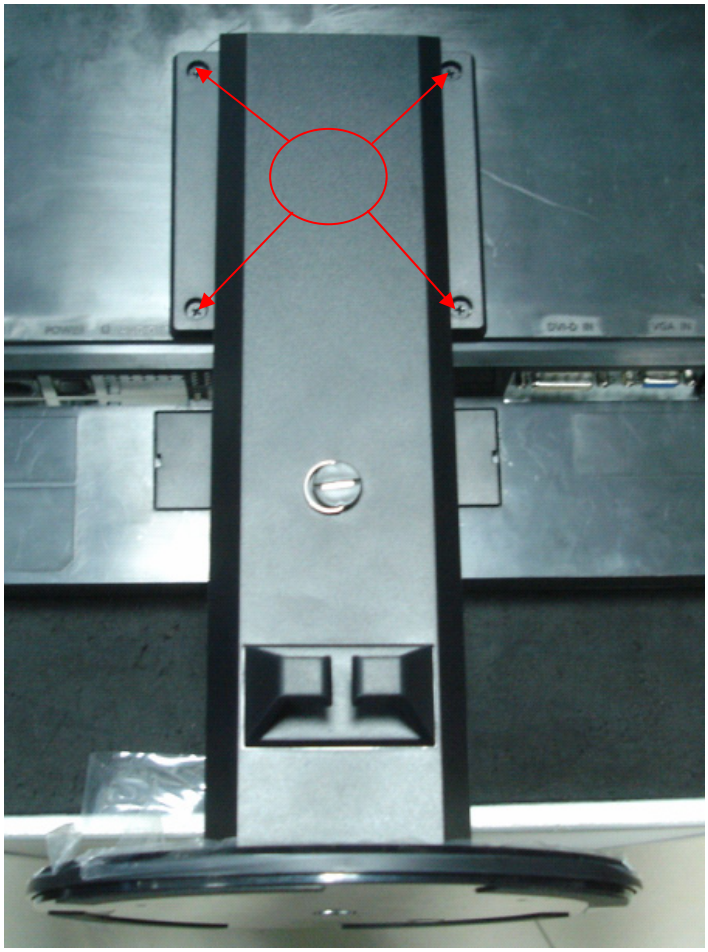


Fig 1

2. Remove the back cover and bezel. (Fig 2)

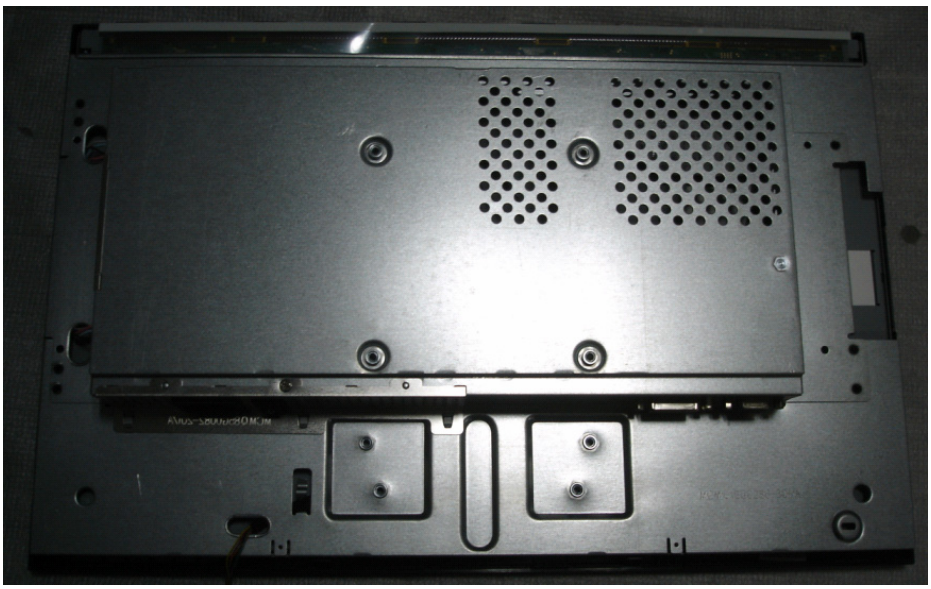


Fig 2

3. Remove the lamp connectors and the screw. (Fig 3)

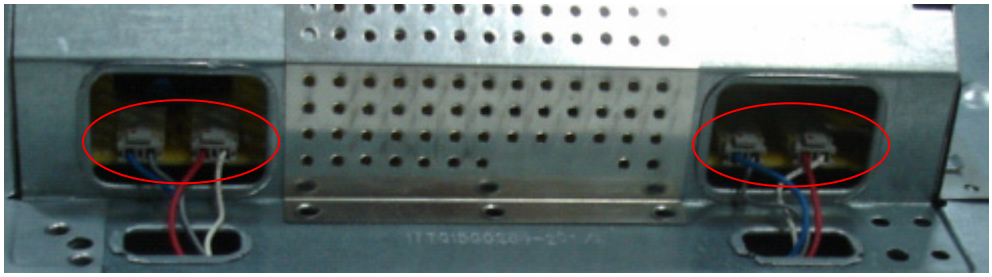


Fig 3

4. Remove the screws to remove the panel. Pay attention to the LVDS cable.(Fig 4-5)

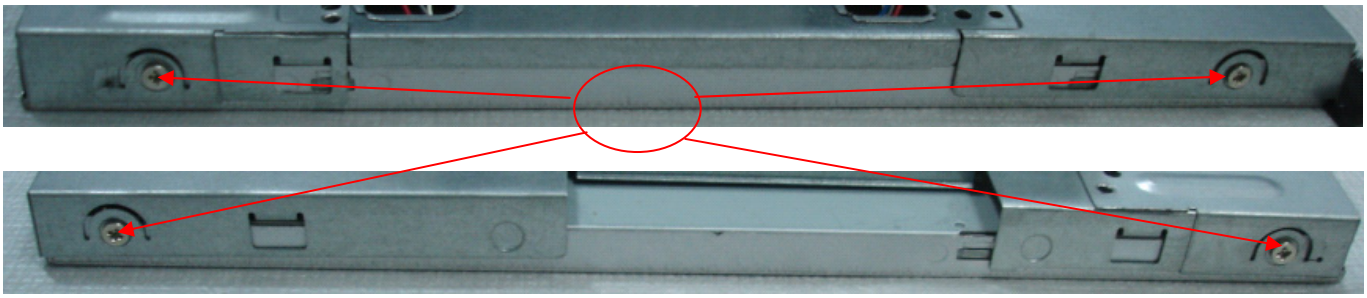


Fig 4

Fig 5

5. Remove the screws to remove the main board and power board.(Fig 6)

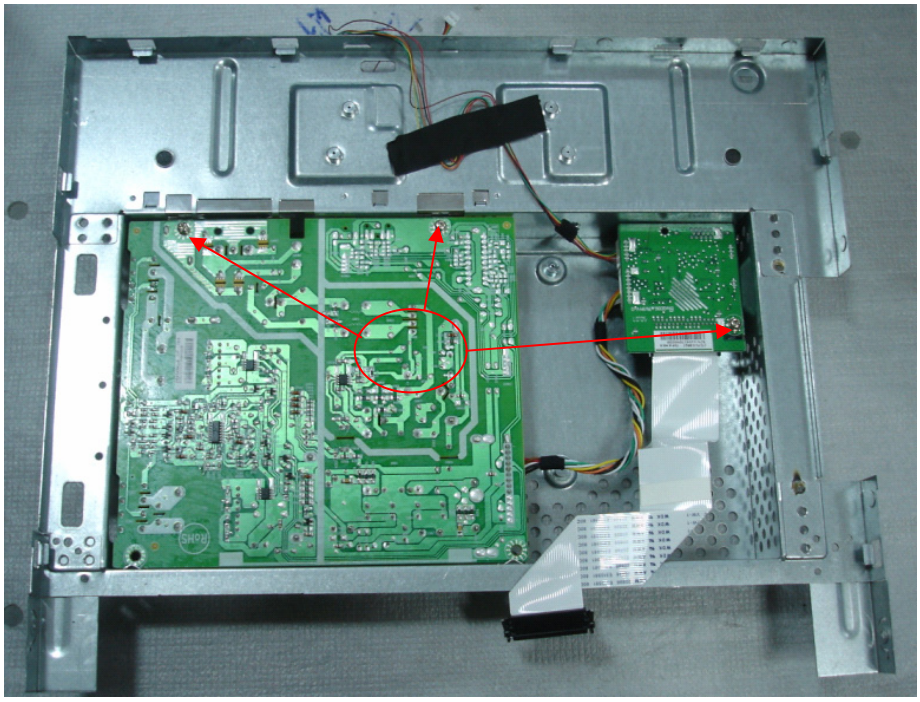


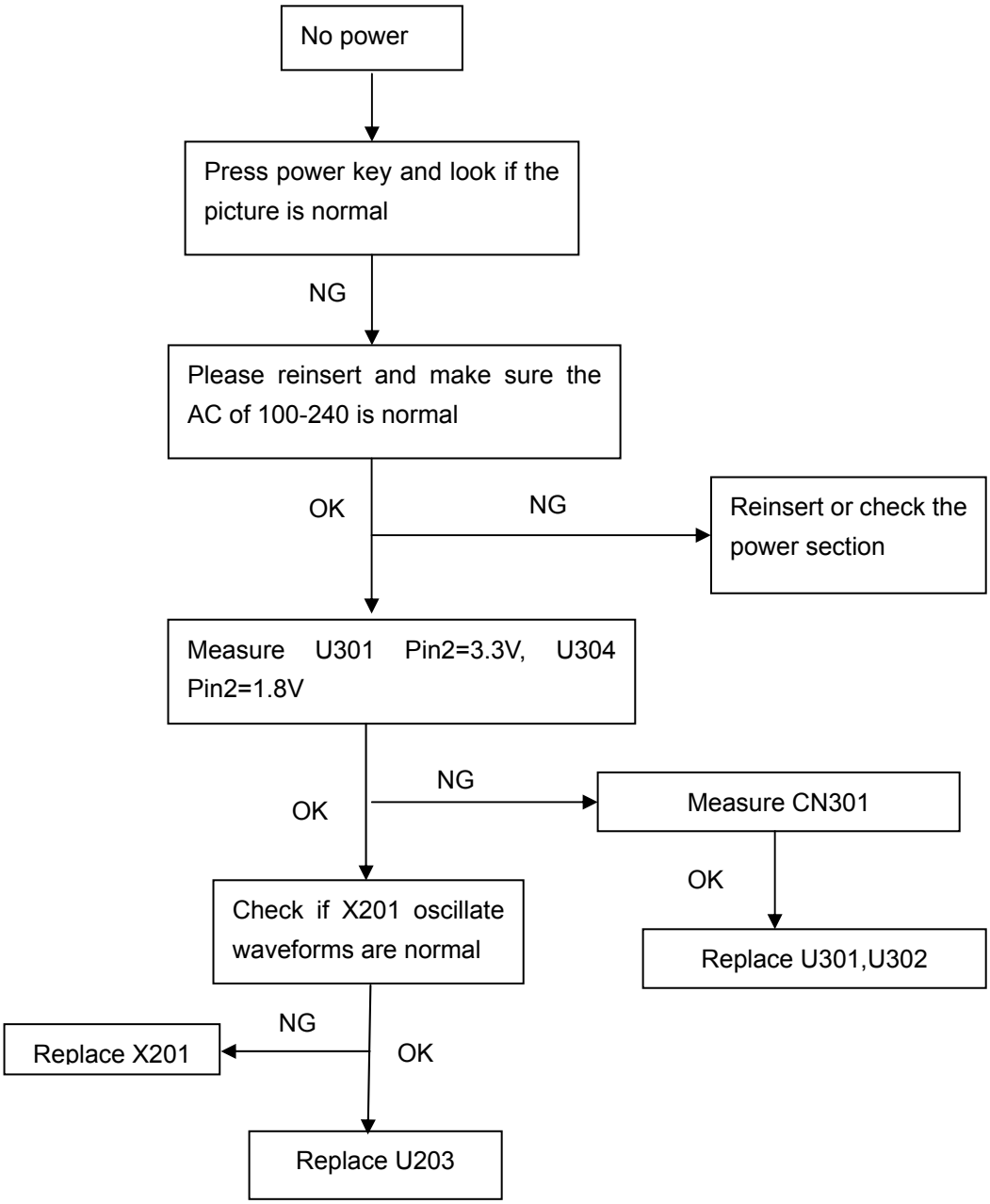
Fig 6

Troubleshooting

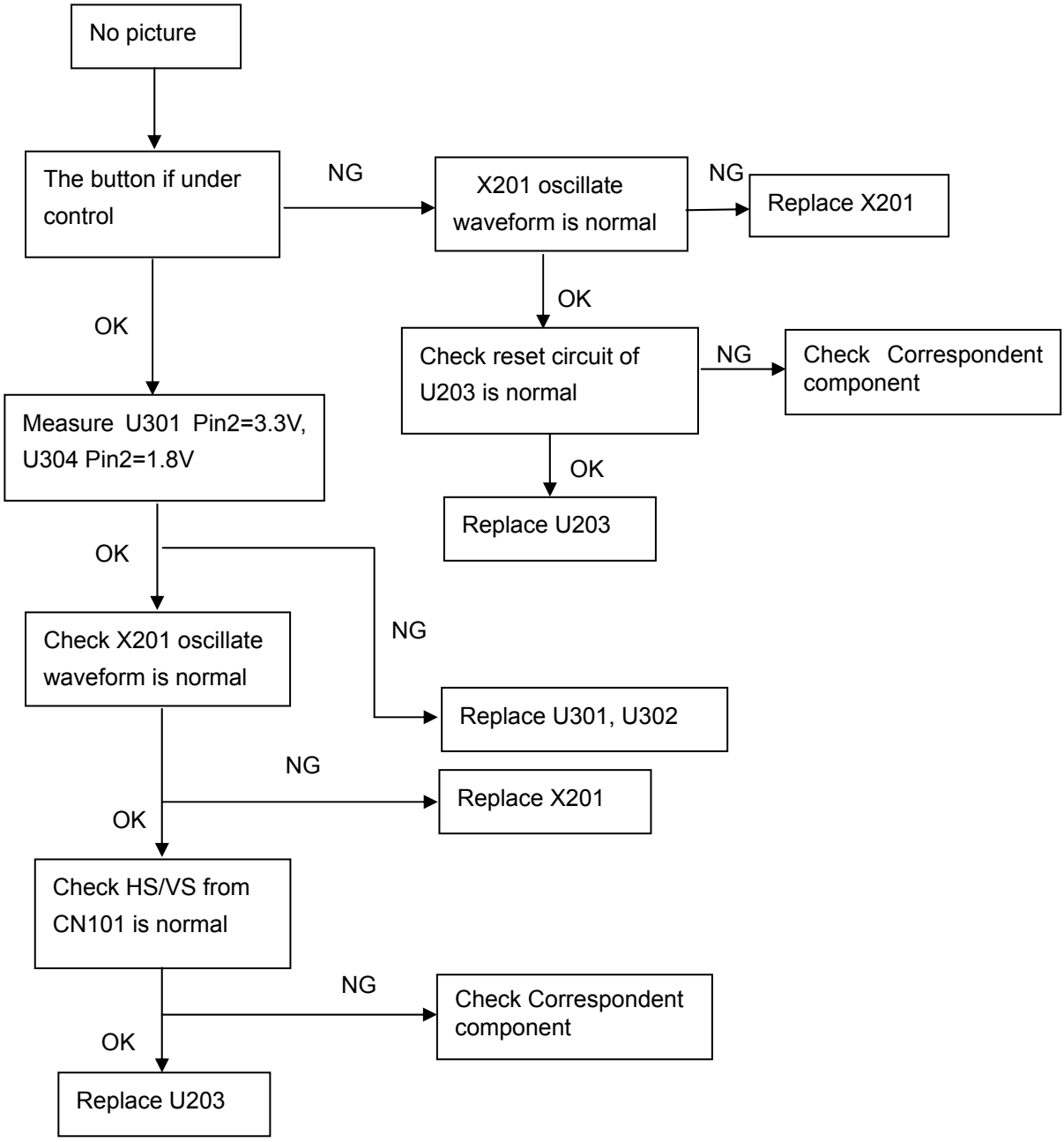
Chapter 4

This chapter provides troubleshooting information for the B193R:

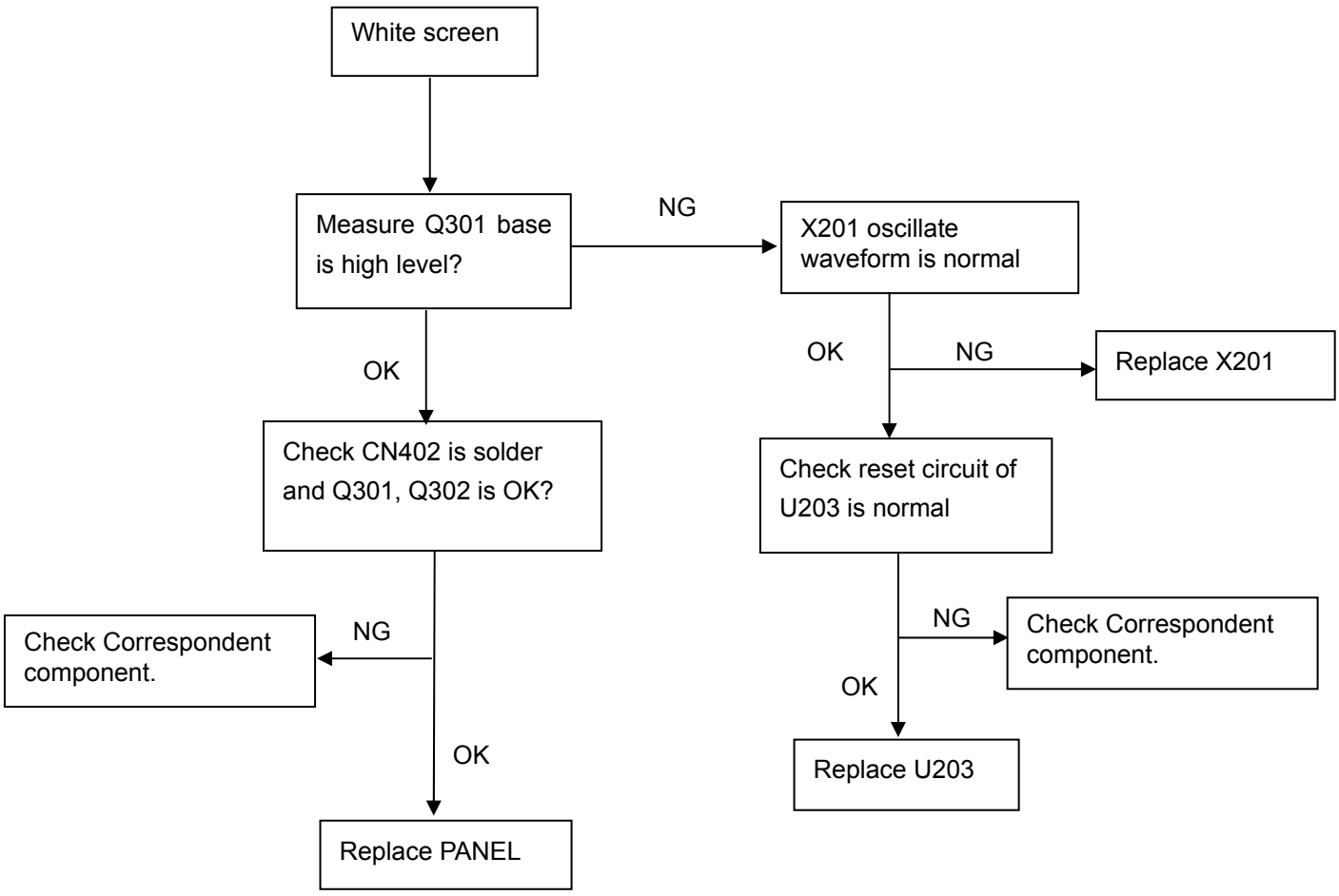
1. No Power



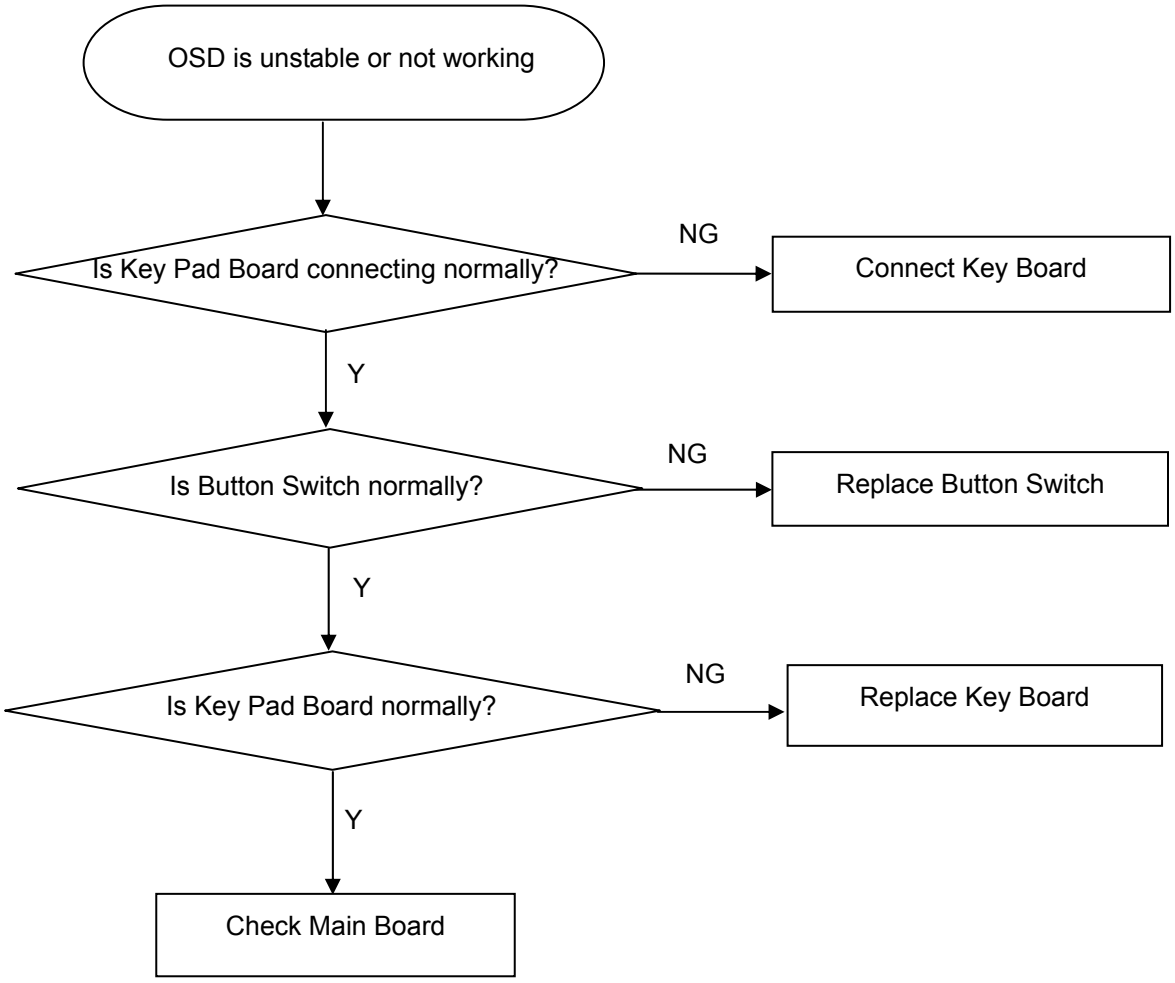
2. No Picture (LED is orange)



3. Panel Power Circuit

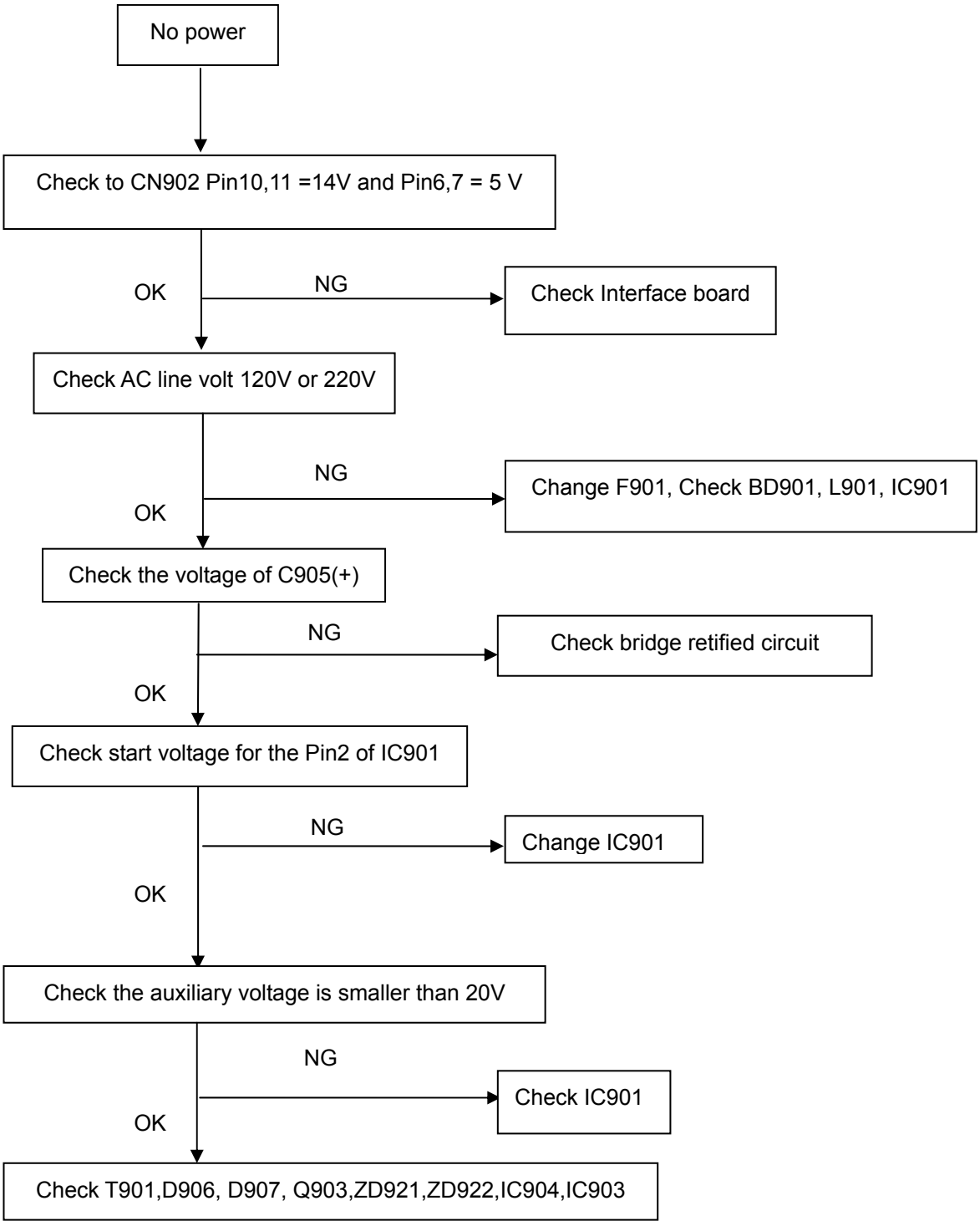


4. Key Board

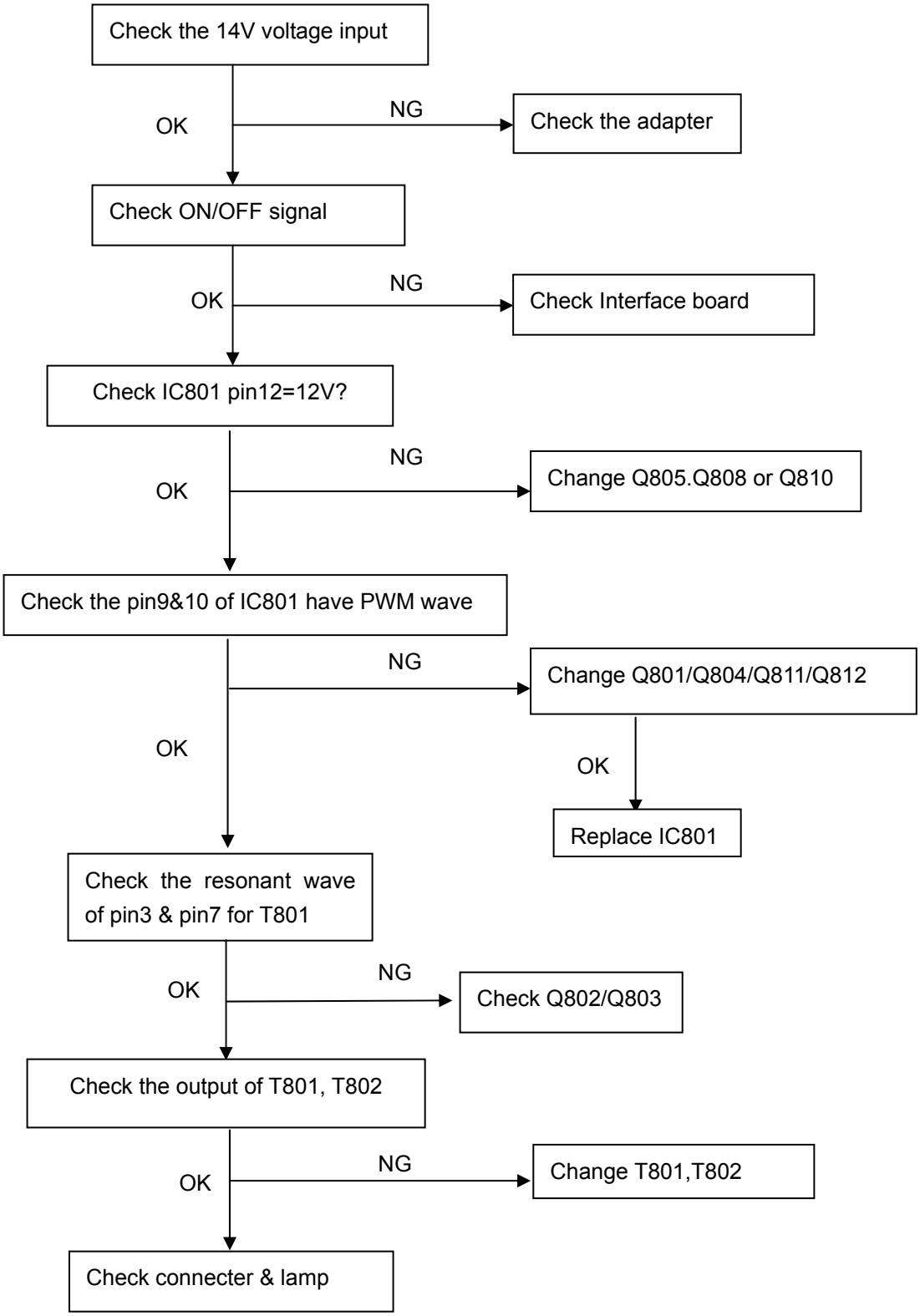

OSD is unstable or not working
Is Key Pad Board connecting normally?
NG
Connect Key Board
Y
Is Button Switch normally?
NG
Replace Button Switch
Y
Is Key Pad Board normally?
NG
Replace Key Board
Y
Check Main Board

5. Power Board

No power



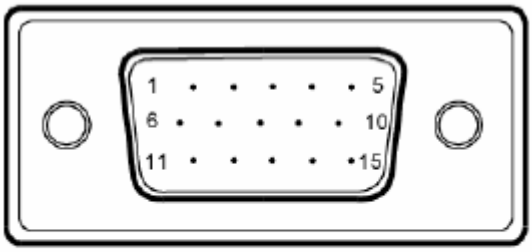
W/LED No Backlight



Connector Information

The following figure shows the connector locations on the monitor:

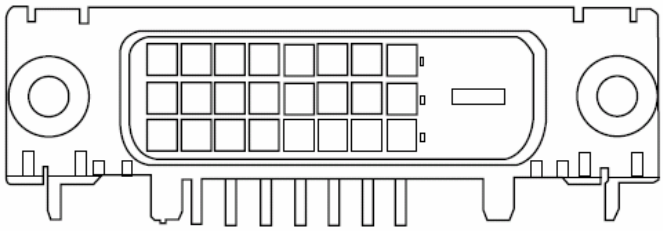
D-SUB connector



15-Pin Color Display Signal Cable

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1.	Red	9.	+5V
2.	Green	10.	Logic Ground
3.	Blue	11.	Monitor Ground
4.	Monitor Ground	12.	DDC-Serial Data
5.	DDC-return	13.	H-Sync
6.	R-Ground	14.	V-Sync
7.	G-Ground	15.	DDC-Serial Clock
8.	B-Ground		

DVI Connector



24-pin color display signal cable

PIN No.	Description	PIN No.	Description
1	TMDS data 2-	13	NC
2	TMDS data 2+	14	+5 V power
3	TMDS data 2/4 shield	15	GND (return for +5 V hsync.vsync)
4	NC	16	Hot-plug detection
5	NC	17	TMDS data 0-
6	DDC clock	18	TMDS data 0+
7	DDC data	19	TMDS data 0/5 shield
8	NC	20	NC
9	TMDS data 1-	21	NC
10	TMDS data 1+	22	TMDS clock shield
11	TMDS data 1/3 shield	23	TMDS clock+
12	NC	24	DDC TMDS clock-

FRU (Field Replaceable Unit) List

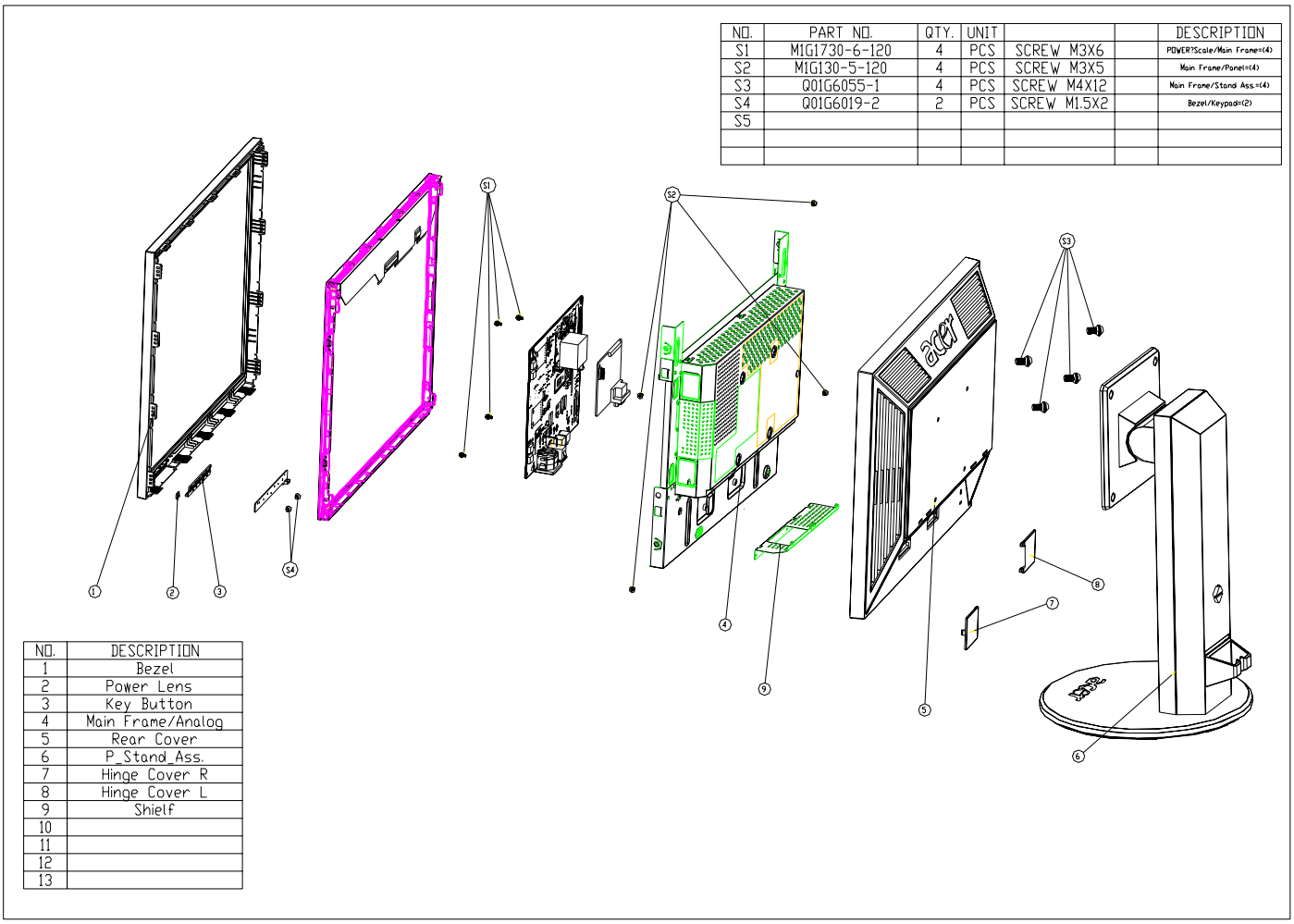
Chapter 6

This chapter gives you the FRU (Field Replaceable Unit) listing in global configurations of B193R.Refer to this chapter whenever ordering for parts to repair or for RMA (Return Merchandise Authorization).

NOTE: Please note WHEN ORDERING FRU PARTS, that you should check the most up-to-date information available on your regional web or channel (http://aicsl.acer.com.tw/spl/). For whatever reasons a part number change is made, it will not be noted in the printed Service Guide. For ACER AUTHORIZED SERVICE PROVIDERS, your Acer office may have a DIFFERENT part number code from those given in the FRU list of this printed Service Guide. You MUST use the local FRU list provided by your regional Acer office to order FRU parts for repair and service of customer machines.

NOTE: To scrap or to return the defective parts, you should follow the local government ordinance or regulations on how to dispose it properly, or follow the rules set by your regional Acer office on how to return it.

Exploded Diagram (Model: B193R)

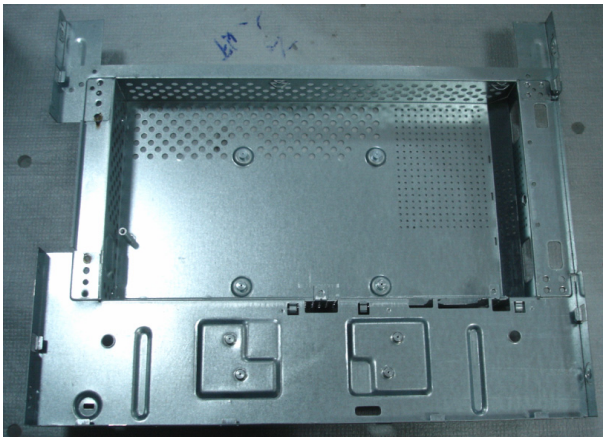


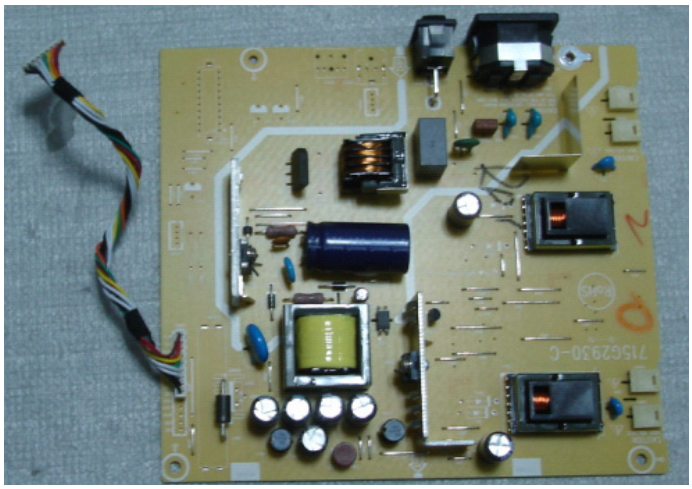
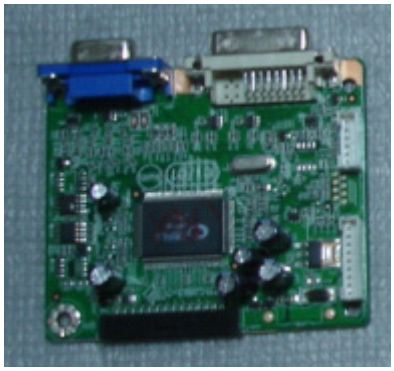
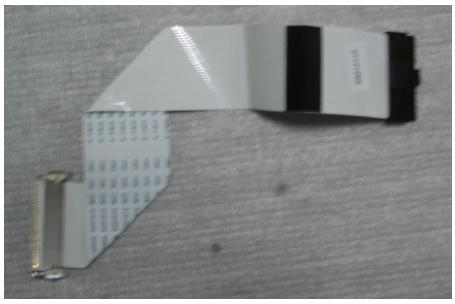
NO.	PART NO.	QTY.	UNIT			DESCRIPTION
S1	M1G1730-6-120	4	PCS	SCREW M3X6		POWER'Scale/Main Frame=(4)
S2	M1G130-5-120	4	PCS	SCREW M3X5		Main Frame/Panel=(4)
S3	Q01G6055-1	4	PCS	SCREW M4X12		Main Frame/Stand Ass.=(4)
S4	Q01G6019-2	2	PCS	SCREW M1.5X2		Bezel/Keypad=(2)
S5						

NO.	DESCRIPTION
1	Bezel
2	Power Lens
3	Key Button
4	Main Frame/Analog
5	Rear Cover
6	P_Stand_Ass.
7	Hinge Cover R
8	Hinge Cover L
9	Shielf
10	
11	
12	
13	

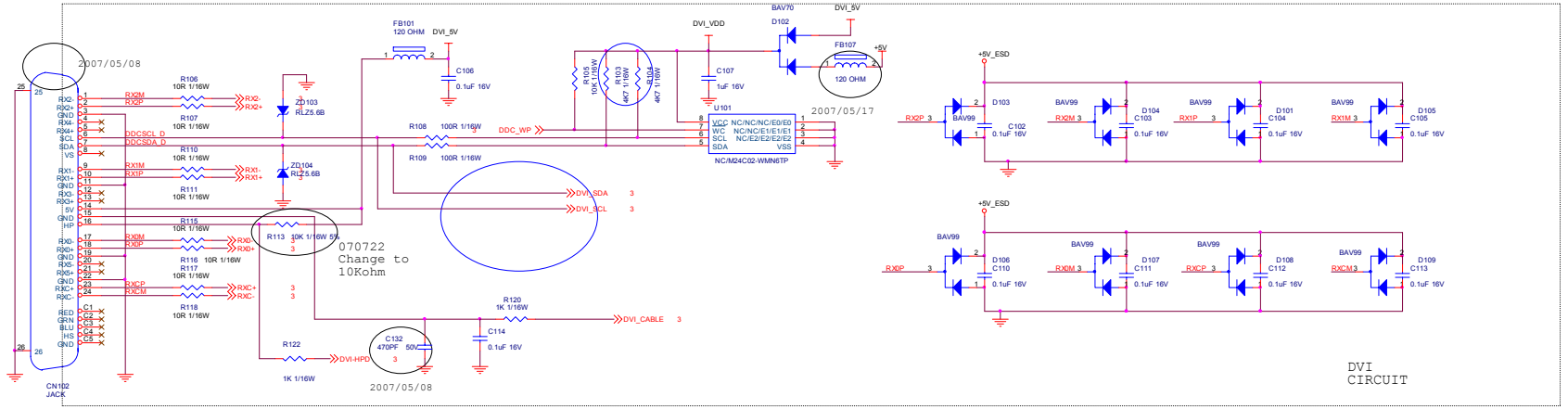
Part List

Above picture show the description of the following component.

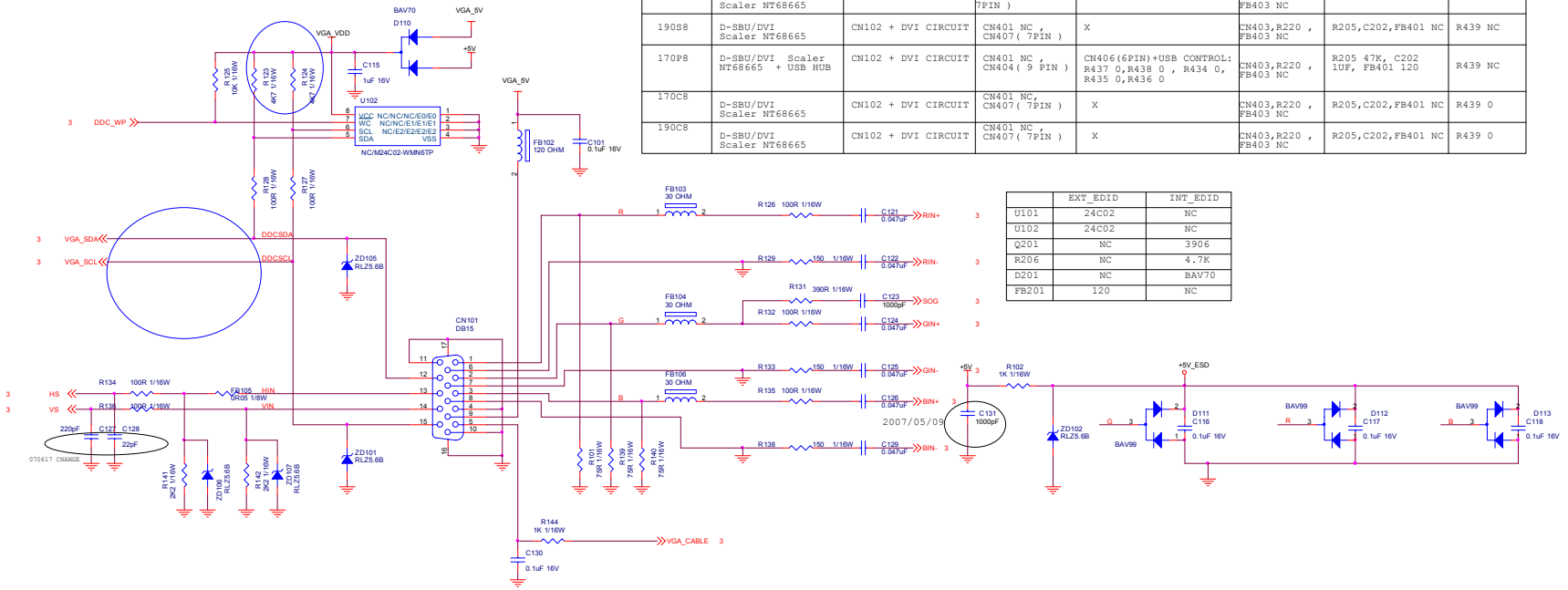
Item	Picture	Description
1		HINGE ASSEMBLY
2		MAIN FRAME
3		Panel

4		Power Board
5		Main Board
6		FFC CABLE

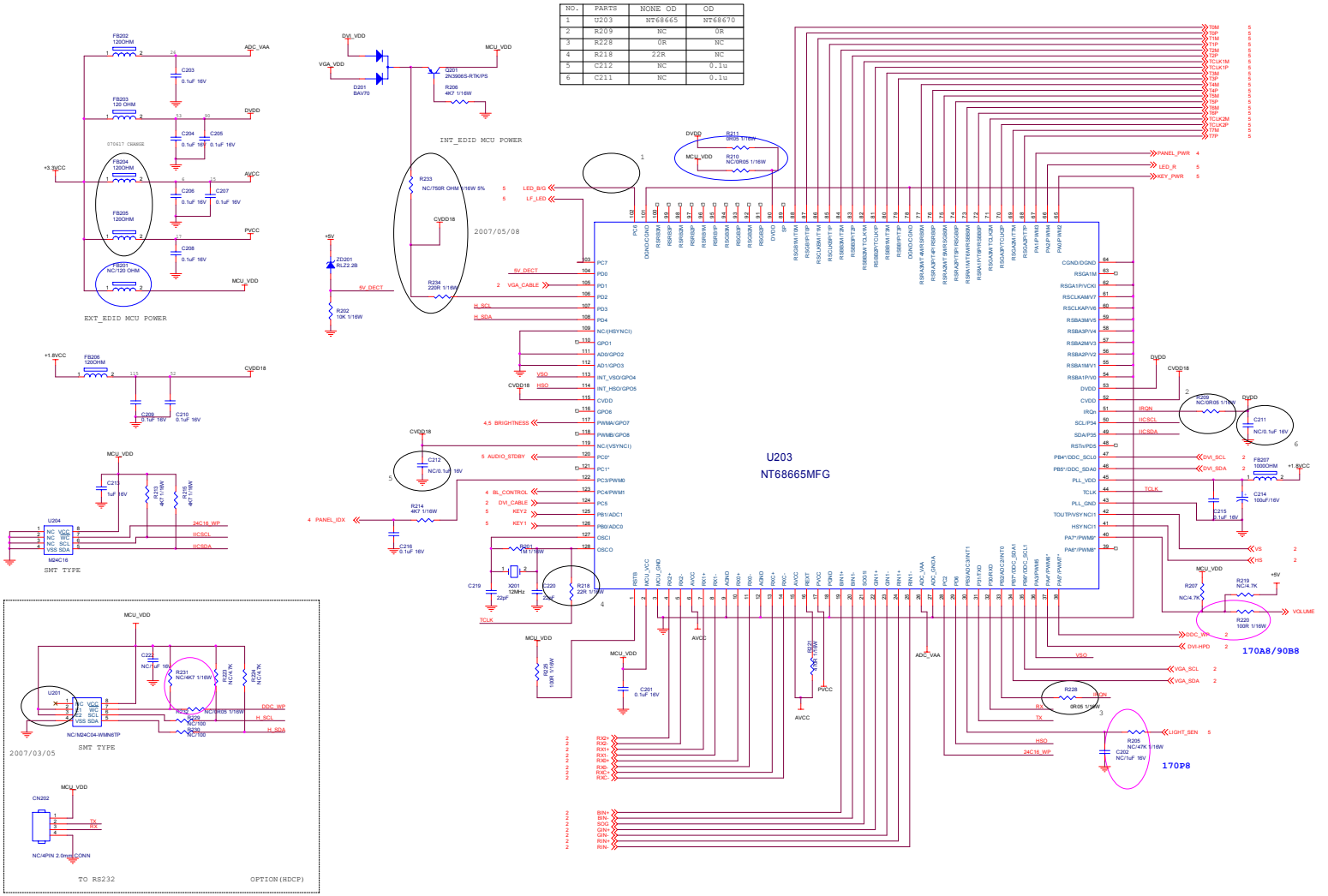
Main Board

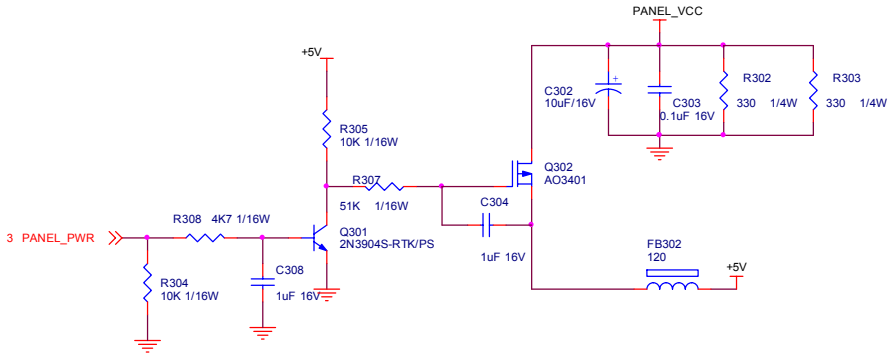


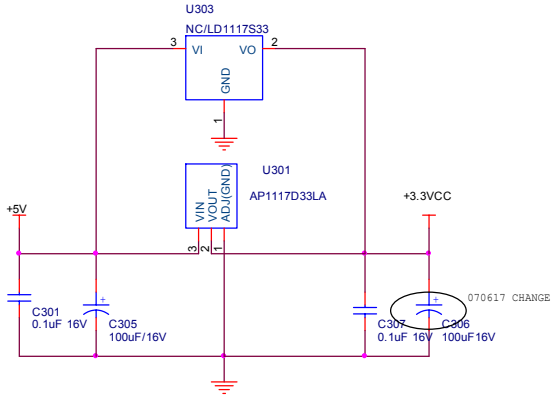
MODEL	FUNCTION	DVI CON.	KEY CON.	USB CON.	VOLUME CON.	LIGHT SENSOR CONT.	CN407 CON. GND
190B8	D-SBU Scaler NT68665 + AUDIO	CN102 + DVI CIRCUIT	CN401(13PIN)	X	CN403(2x6PIN) , R202 100	R205,C202,FB401 NC	R439 NC
170A8	D-SBU Scaler NT68625 + AUDIO	CN102 NC	CN401(13PIN)	X	CN403(2x6PIN) , R220 100	R205,C202,FB401 NC	R439 NC
170S8	D-SBU/DVI Scaler NT68665	CN102 + DVI CIRCUIT	CN401 NC, CN407(7PIN)	X	CN403,R220 , FB403 NC	R205,C202,FB401 NC	R439 NC
190S8	D-SBU/DVI Scaler NT68665	CN102 + DVI CIRCUIT	CN401 NC , CN407(7PIN)	X	CN403,R220 , FB403 NC	R205,C202,FB401 NC	R439 NC
170P8	D-SBU/DVI Scaler NT68665 + USB HUB	CN102 + DVI CIRCUIT	CN401 NC , CN404(9 PIN)	CN406(6PIN)+USB CONTROL: R437 0,R438 0 , R434 0, R435 0,R436 0	CN403,R220 , FB403 NC	R205 47K, C202 1UF, FB401 120	R439 NC
170C8	D-SBU/DVI Scaler NT68665	CN102 + DVI CIRCUIT	CN401 NC, CN407(7PIN)	X	CN403,R220 , FB403 NC	R205,C202,FB401 NC	R439 0
190C8	D-SBU/DVI Scaler NT68665	CN102 + DVI CIRCUIT	CN401 NC , CN407(7PIN)	X	CN403,R220 , FB403 NC	R205,C202,FB401 NC	R439 0

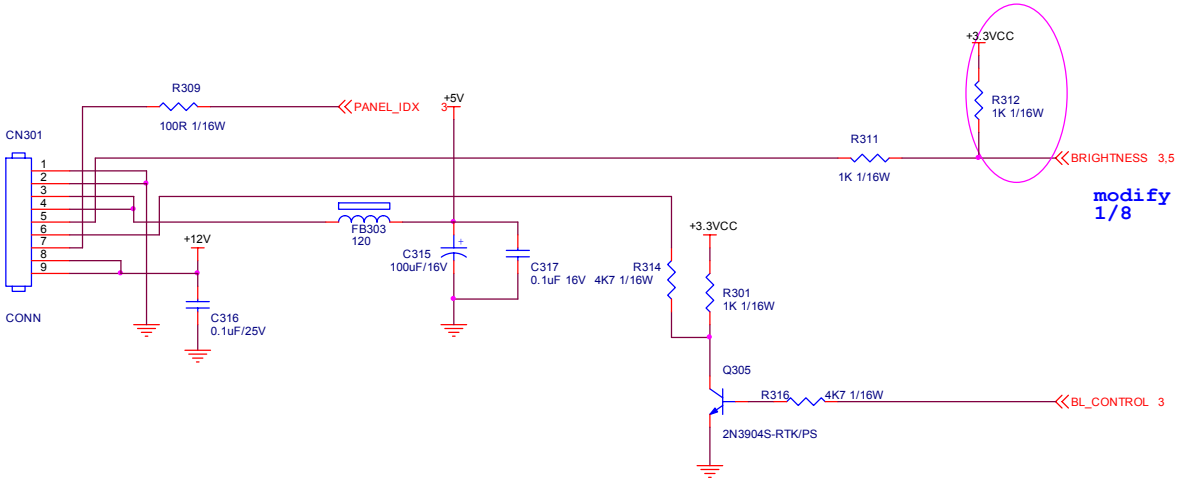


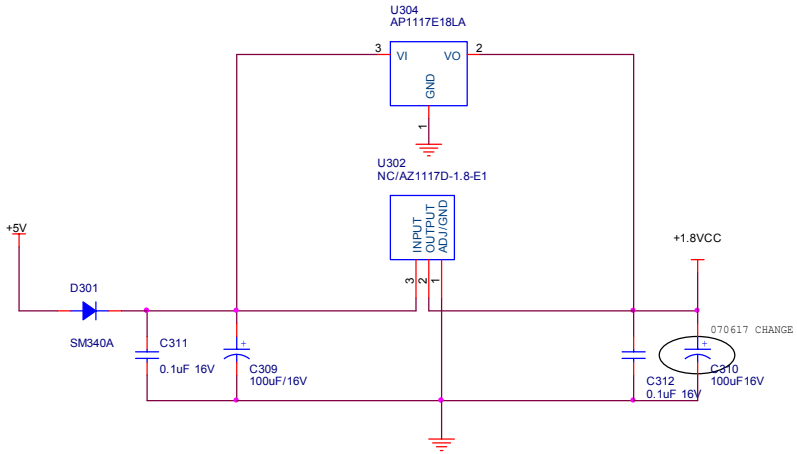
	EXT_EDID	INT_EDID
U101	24C02	NC
U102	24C02	NC
Q201	NC	3906
R206	NC	4.7K
D201	NC	BAV70
FB201	120	NC

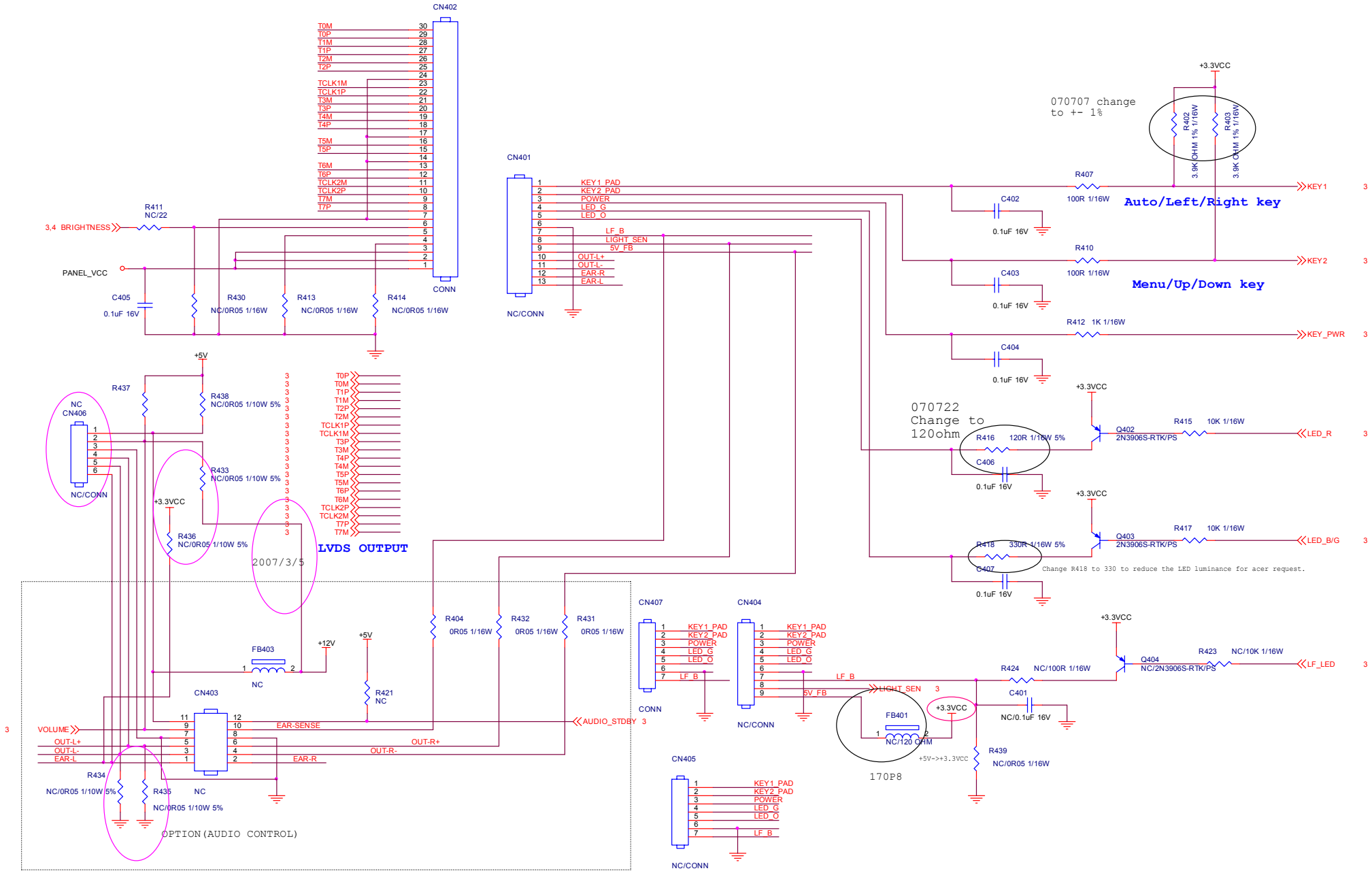

NO. PARTS NONE OD OD
1 U203 NT68665 NT68670
2 R209 NC 0R
3 R228 0R NC
4 R218 22R NC
5 C212 NC 0.1u
6 C211 NC 0.1u
EXT_EDID MCU POWER
INT_EDID MCU POWER
SMT TYPE
SMT TYPE
TO RS232
OPTION(HDCP)
U203
NT68665MFG
170A8/90B8
170P8


PANEL_VCC
+5V
C302
10uF/16V
C303
0.1uF 16V
R302
330 1/4W
R303
330 1/4W
R305
10K 1/16W
R307
51K 1/16W
Q302
AO3401
C304
1uF 16V
R308 4K7 1/16W
3 PANEL_PWR
Q301
2N3904S-RTK/PS
R304
10K 1/16W
C308
1uF 16V
FB302
120
+5V

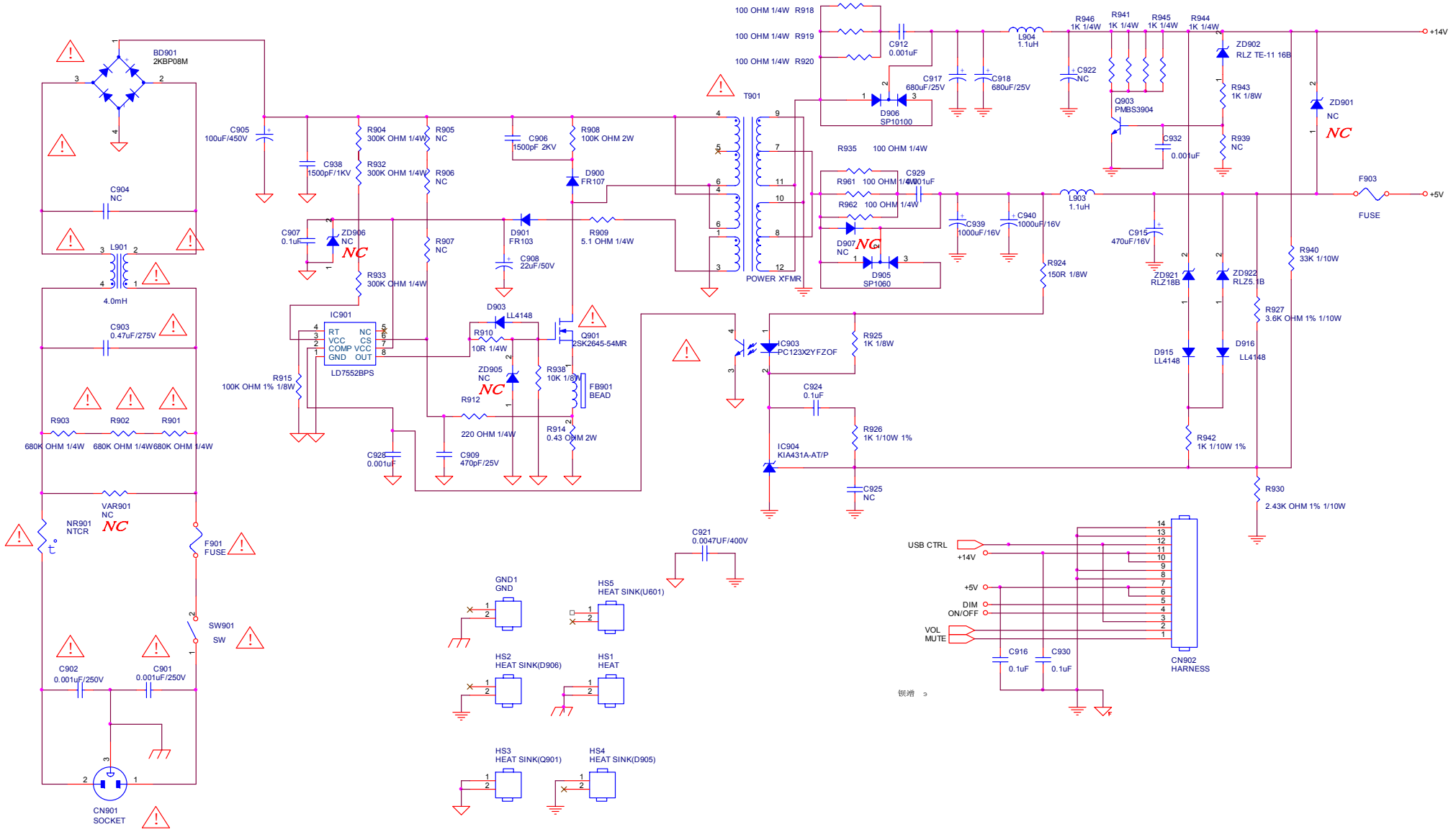

U303
NC/LD1117S33
VI
VO
GND
U301
AP1117D33LA
VIN
VOUT
ADJ(GND)
+5V
+3.3VCC
C301
0.1uF 16V
C305
100uF/16V
C307
0.1uF 16V
C306
100uF16V
070617 CHANGE

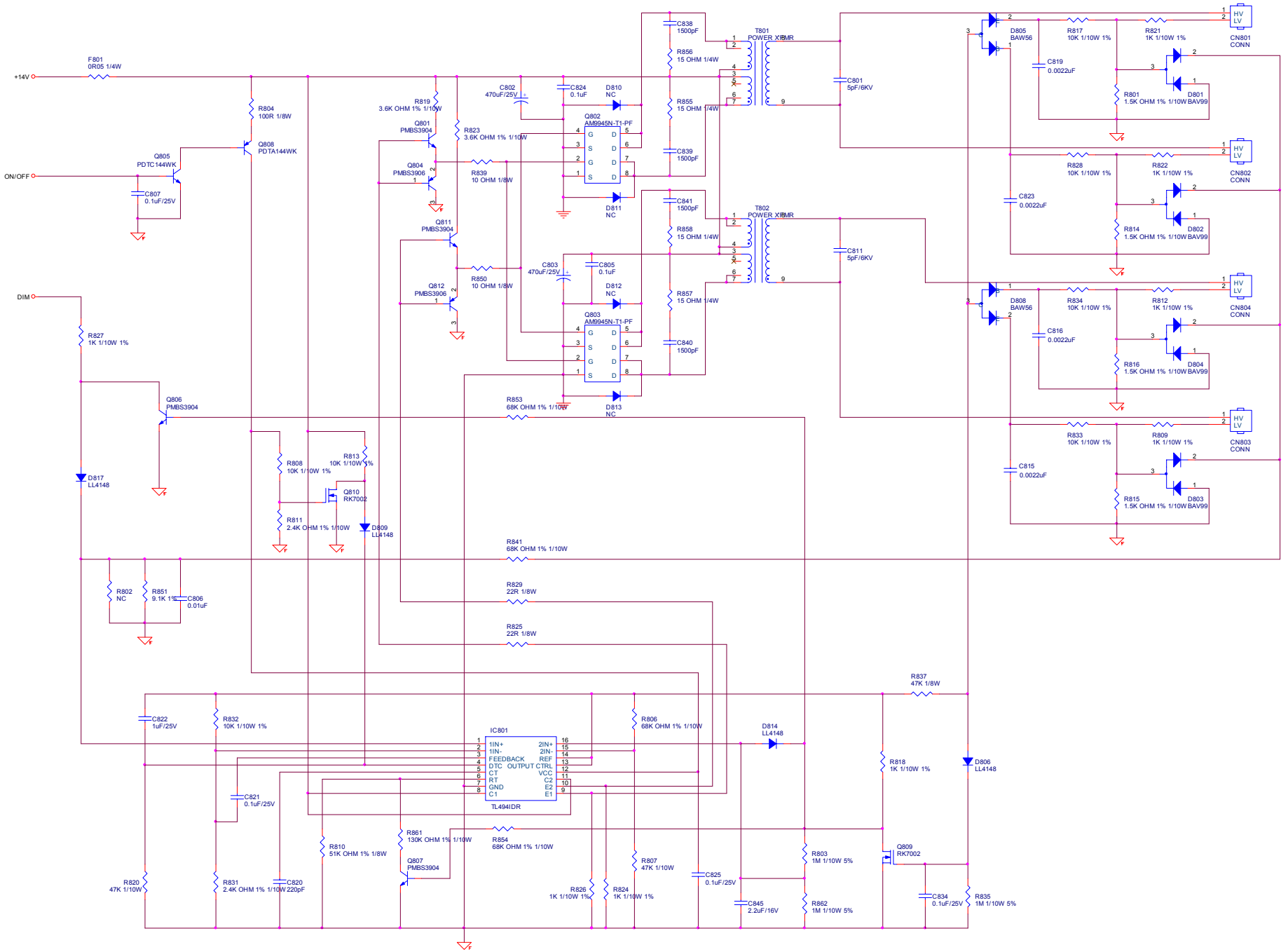

+3.3VCC
R312
1K 1/16W
R309
100R 1/16W
PANEL_IDX 3
+5V
R311
1K 1/16W
BRIGHTNESS 3,5
CN301
CONN
FB303
120
+12V
C315
100uF/16V
C317
0.1uF 16V
R314 4K7 1/16W
+3.3VCC
R301
1K 1/16W
C316
0.1uF/25V
Q305
R316 4K7 1/16W
BL_CONTROL 3
2N3904S-RTK/PS
modify
1/8

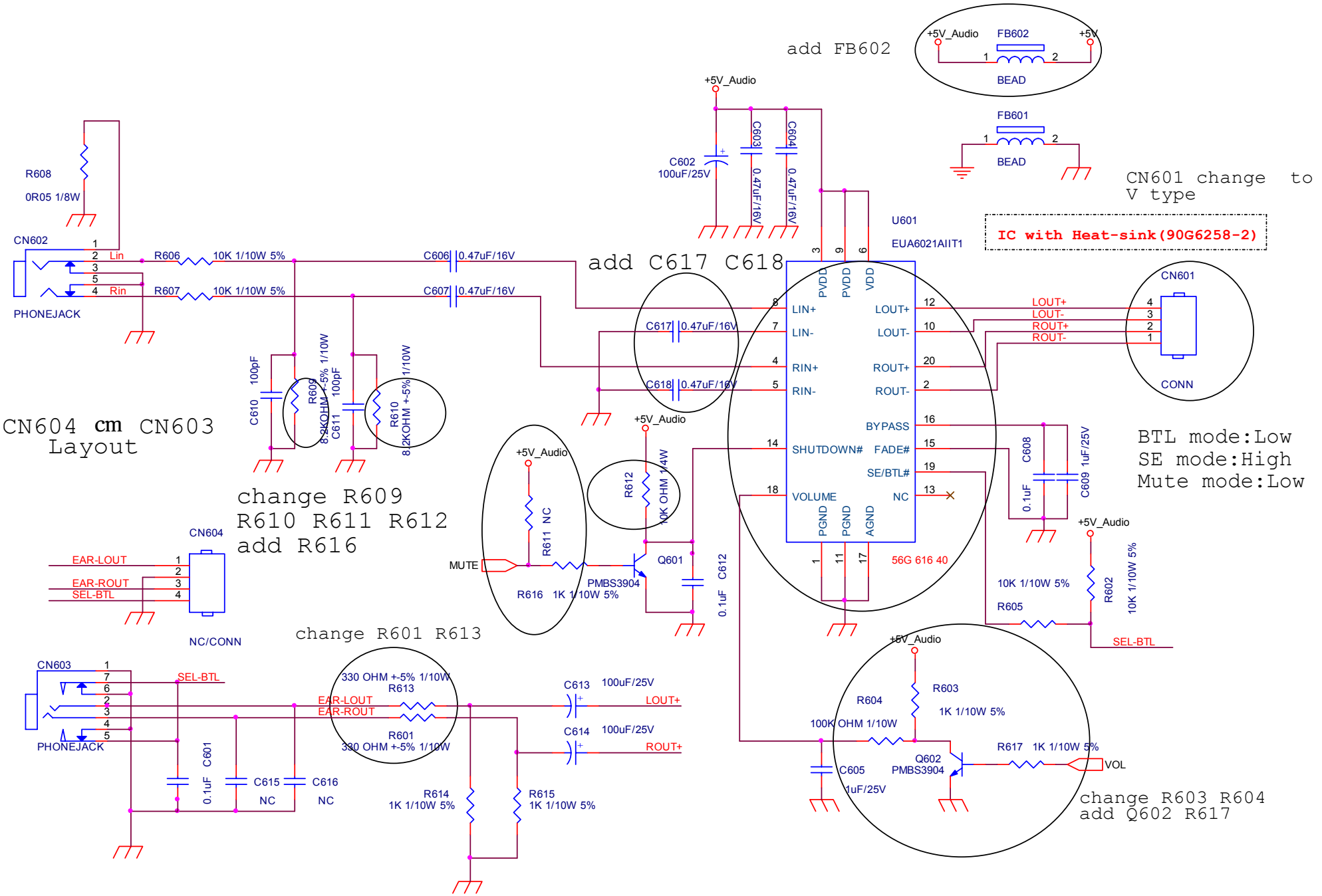

U304
AP1117E18LA
VI
VO
GND
U302
NC/AZ1117D-1.8-E1
INPUT
OUTPUT
ADJ/GND
+5V
D301
SM340A
+1.8VCC
C311
0.1uF 16V
C309
100uF/16V
C312
0.1uF 16V
C310
100uF16V
070617 CHANGE


CN402
T0M
T0P
T1M
T1P
T2M
T2P
TCLK1M
TCLK1P
T3M
T3P
T4M
T4P
T5M
T5P
T6M
T6P
TCLK2M
TCLK2P
T7M
T7P
CONN
3,4 BRIGHTNESS
R411
NC/22
PANEL_VCC
C405
0.1uF 16V
R430
NC/0R05 1/16W
R413
NC/0R05 1/16W
R414
NC/0R05 1/16W
CN401
KEY1_PAD
KEY2_PAD
POWER
LED_G
LED_O
LF_B
LIGHT_SEN
5V_FB
OUT-L+
OUT-L-
EAR-R
EAR-L
NC/CONN
070707 change
to +- 1%
+3.3VCC
R402
3.9K OHM 1% 1/16W
R403
3.9K OHM 1% 1/16W
R407
100R 1/16W
KEY1
Auto/Left/Right key
C402
0.1uF 16V
R410
100R 1/16W
KEY2
Menu/Up/Down key
C403
0.1uF 16V
R412 1K 1/16W
KEY_PWR
C404
0.1uF 16V
070722
Change to
120ohm
R416 120R 1/16W 5%
C406
0.1uF 16V
Q402
2N3906S-RTK/PS
R415 10K 1/16W
LED_R
R418 330R 1/16W 5%
C407
0.1uF 16V
Q403
2N3906S-RTK/PS
R417 10K 1/16W
LED_B/G
Change R418 to 330 to reduce the LED luminance for acer request.
+5V
R437
R438
NC/0R05 1/10W 5%
NC
CN406
NC/CONN
R433
NC/0R05 1/10W 5%
+3.3VCC
R436
NC/0R05 1/10W 5%
2007/3/5
LVDS OUTPUT
R404
0R05 1/16W
R432
0R05 1/16W
R431
0R05 1/16W
FB403
NC
+12V
+5V
R421
NC
CN403
VOLUME
OUT-L+
OUT-L-
EAR-L
EAR-SENSE
OUT-R+
OUT-R-
EAR-R
AUDIO_STDBY
R434
NC/0R05 1/10W 5%
R435
NC/0R05 1/10W 5%
NC
OPTION(AUDIO CONTROL)
CN407
CONN
CN404
NC/CONN
FB401
NC/120 OHM
+5V->+3.3VCC
170P8
R424 NC/100R 1/16W
C401
NC/0.1uF 16V
Q404
NC/2N3906S-RTK/PS
R423 NC/10K 1/16W
LF_LED
R439
NC/0R05 1/16W
CN405
NC/CONN

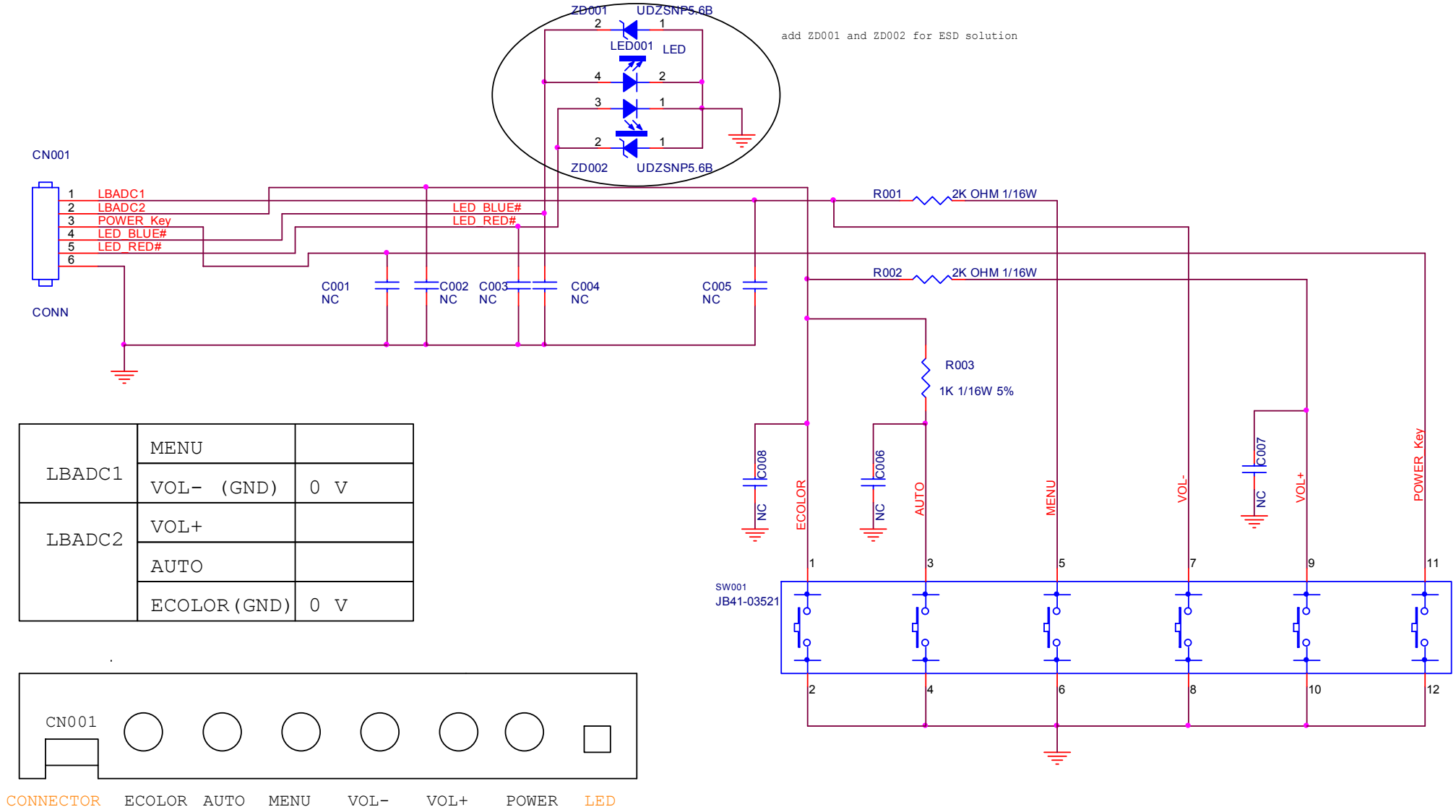
Power board


BD901
2KBP08M
C905
100uF/450V
C904
NC
L901
4.0mH
C903
0.47uF/275V
R903
R902
R901
680K OHM 1/4W
680K OHM 1/4W
680K OHM 1/4W
VAR901
NC
NR901
NTCR
F901
FUSE
SW901
SW
C902
0.001uF/250V
C901
0.001uF/250V
CN901
SOCKET
C938
1500pF/1KV
R904
300K OHM 1/4W
R932
300K OHM 1/4W
R933
300K OHM 1/4W
R905
NC
R906
NC
R907
NC
C907
0.1uF
ZD906
NC
NC
IC901
RT
VCC
COMP
GND
NC
CS
VCC
OUT
LD7552BPS
R915
100K OHM 1% 1/8W
C928
0.001uF
C906
1500pF 2KV
R908
100K OHM 2W
D900
FR107
D901
FR103
R909
5.1 OHM 1/4W
C908
22uF/50V
D903
LL4148
R910
10R 1/4W
ZD905
NC
NC
R912
220 OHM 1/4W
C909
470pF/25V
Q901
2SK2645-54MR
R938
10K 1/8W
FB901
BEAD
R914
0.43 OHM 2W
T901
POWER XFMR
100 OHM 1/4W R918
100 OHM 1/4W R919
100 OHM 1/4W R920
C912
0.001uF
D906
SP10100
C917
680uF/25V
C918
680uF/25V
L904
1.1uH
R946
1K 1/4W
R941
1K 1/4W
R945
1K 1/4W
R944
1K 1/4W
Q903
PMBS3904
C922
NC
C932
0.001uF
ZD902
RLZ TE-11 16B
R943
1K 1/8W
R939
NC
ZD901
NC
NC
+14V
F903
FUSE
+5V
R935
100 OHM 1/4W
R961
100 OHM 1/4W
R962
100 OHM 1/4W
C929
0.001uF
D907
NC
NC
D905
SP1060
C939
1000uF/16V
C940
1000uF/16V
L903
1.1uH
C915
470uF/16V
ZD921
RLZ18B
ZD922
RLZ5.1B
R940
33K 1/10W
R927
3.6K OHM 1% 1/10W
D915
LL4148
D916
LL4148
R924
150R 1/8W
IC903
PC123X2YFZOF
R925
1K 1/8W
C924
0.1uF
R926
1K 1/10W 1%
IC904
KIA431A-AT/P
C925
NC
R942
1K 1/10W 1%
R930
2.43K OHM 1% 1/10W
C921
0.0047UF/400V
GND1
GND
HS5
HEAT SINK(U601)
HS2
HEAT SINK(D906)
HS1
HEAT
HS3
HEAT SINK(Q901)
HS4
HEAT SINK(D905)
USB CTRL
+14V
+5V
DIM
ON/OFF
VOL
MUTE
C916
0.1uF
C930
0.1uF
CN902
HARNESS


+14V
ON/OFF
DIM
F801
0R05 1/4W
R804
100R 1/8W
Q808
PDTA144WK
Q805
PDTC144WK
C807
0.1uF/25V
R819
3.6K OHM 1% 1/10W
Q801
PMBS3904
Q804
PMBS3906
R823
3.6K OHM 1% 1/10W
R839
10 OHM 1/8W
Q811
PMBS3904
Q812
PMBS3906
R850
10 OHM 1/8W
C802
470uF/25V
C824
0.1uF
D810
NC
Q802
AM9945N-T1-PF
D811
NC
C803
470uF/25V
C805
0.1uF
D812
NC
Q803
AM9945N-T1-PF
D813
NC
C838
1500pF
R856
15 OHM 1/4W
R855
15 OHM 1/4W
C839
1500pF
C841
1500pF
R858
15 OHM 1/4W
R857
15 OHM 1/4W
C840
1500pF
T801
POWER XFMR
T802
POWER XFMR
C801
5pF/6KV
C811
5pF/6KV
D805
BAW56
R817
10K 1/10W 1%
R821
1K 1/10W 1%
C819
0.0022uF
R801
1.5K OHM 1% 1/10W
D801
BAV99
CN801
CONN
R828
10K 1/10W 1%
R822
1K 1/10W 1%
C823
0.0022uF
R814
1.5K OHM 1% 1/10W
D802
BAV99
CN802
CONN
D808
BAW56
R834
10K 1/10W 1%
R812
1K 1/10W 1%
C816
0.0022uF
R816
1.5K OHM 1% 1/10W
D804
BAV99
CN804
CONN
R833
10K 1/10W 1%
R809
1K 1/10W 1%
C815
0.0022uF
R815
1.5K OHM 1% 1/10W
D803
BAV99
CN803
CONN
HV
LV
R827
1K 1/10W 1%
Q806
PMBS3904
D817
LL4148
R808
10K 1/10W 1%
R813
10K 1/10W 1%
Q810
RK7002
R811
2.4K OHM 1% 1/10W
D809
LL4148
R853
68K OHM 1% 1/10W
R841
68K OHM 1% 1/10W
R829
22R 1/8W
R825
22R 1/8W
R802
NC
R851
9.1K 1%
C806
0.01uF
R837
47K 1/8W
C822
1uF/25V
R832
10K 1/10W 1%
IC801
1IN+
1IN-
FEEDBACK
DTC
CT
RT
GND
C1
2IN+
2IN-
REF
OUTPUT CTRL
VCC
C2
E2
E1
TL494IDR
R806
68K OHM 1% 1/10W
D814
LL4148
R818
1K 1/10W 1%
D806
LL4148
C821
0.1uF/25V
R861
130K OHM 1% 1/10W
R854
68K OHM 1% 1/10W
R810
51K OHM 1% 1/8W
Q807
PMBS3904
R820
47K 1/10W
R831
2.4K OHM 1% 1/10W
C820
220pF
R826
1K 1/10W 1%
R824
1K 1/10W 1%
R807
47K 1/10W
C825
0.1uF/25V
C845
2.2uF/16V
R803
1M 1/10W 5%
R862
1M 1/10W 5%
Q809
RK7002
C834
0.1uF/25V
R835
1M 1/10W 5%


add FB602
+5V_Audio
FB602
+5V
BEAD
FB601
CN601 change to V type
IC with Heat-sink(90G6258-2)
U601
EUA6021AIIT1
add C617 C618
C602 100uF/25V
C603 0.47uF/16V
C604 0.47uF/16V
R608 0R05 1/8W
CN602
PHONEJACK
Lin
Rin
R606 10K 1/10W 5%
R607 10K 1/10W 5%
C606 0.47uF/16V
C607 0.47uF/16V
C617 0.47uF/16V
C618 0.47uF/16V
C610 100pF
R609 8.2KOHM +-5% 1/10W
C611 100pF
R610 8.2KOHM +-5% 1/10W
CN604 cm CN603 Layout
change R609 R610 R611 R612 add R616
PVDD
VDD
LIN+
LIN-
RIN+
RIN-
SHUTDOWN#
VOLUME
BYPASS
FADE#
SE/BTL#
NC
LOUT+
LOUT-
ROUT+
ROUT-
PGND
AGND
56G 616 40
CN601
CONN
LOUT+
LOUT-
ROUT+
ROUT-
BTL mode:Low
SE mode:High
Mute mode:Low
C608 0.1uF
C609 1uF/25V
+5V_Audio
R612 10K OHM 1/4W
R611 NC
MUTE
Q601
PMBS3904
R616 1K 1/10W 5%
C612 0.1uF
CN604
EAR-LOUT
EAR-ROUT
SEL-BTL
NC/CONN
change R601 R613
CN603
PHONEJACK
SEL-BTL
330 OHM +-5% 1/10W R613
R601 330 OHM +-5% 1/10W
EAR-LOUT
EAR-ROUT
C613 100uF/25V
C614 100uF/25V
LOUT+
ROUT+
C601 0.1uF
C615 NC
C616 NC
R614 1K 1/10W 5%
R615 1K 1/10W 5%
R605
10K 1/10W 5%
R602 10K 1/10W 5%
SEL-BTL
R604 100K OHM 1/10W
R603 1K 1/10W 5%
C605 1uF/25V
Q602 PMBS3904
R617 1K 1/10W 5%
VOL
change R603 R604 add Q602 R617

Key board



LBADC1	MENU	
	VOL- (GND)	0 V
LBADC2	VOL+	
	AUTO	
	ECOLOR(GND)	0 V